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ABSTRACT

Designed for use in a hunter education course or as a self-teaching workbook, the student manual presents the following topics: an overall picture including firearms accidents and hunter education; firearms and ammunition; hunting tradition and ethics; the hunter and conservation; safe firearms handling; hunter responsibilities; hunter preparedness; and step-by-step process for care of game (quail, dove, woodcock, turkey, pheasant, grouse, ducks, geese, squirrel, rabbit, and deer). Each chapter contains objectives for the lesson, detailed information on the topic, a glossary of terms used in the lesson, and review questions to be answered. The final evaluation of course objectives, consisting of 50 questions from the chapter reviews, and an answer sheet conclude the manual. (ERB)

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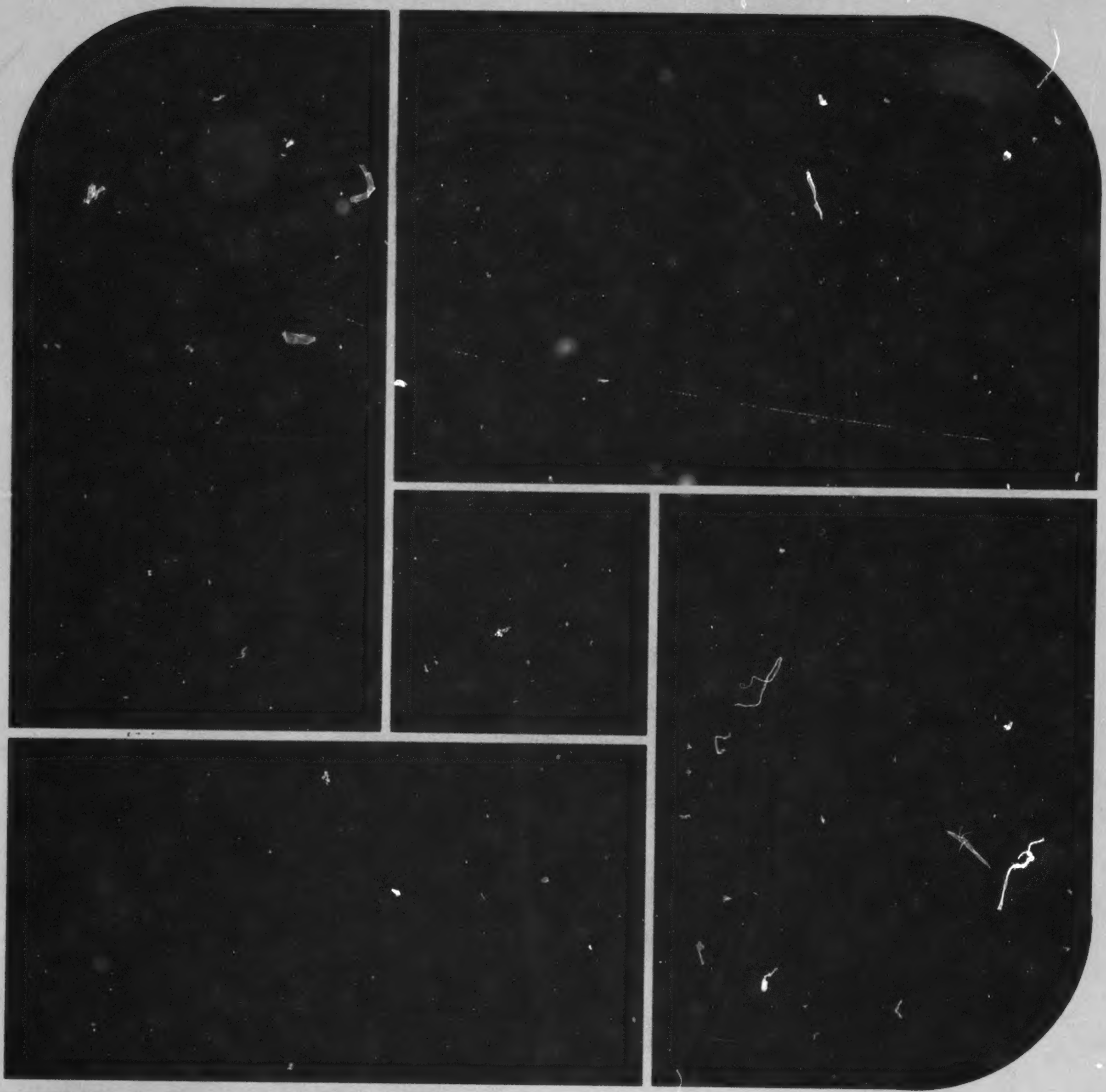

HUNTER EDUCATION
STUDENT MANUAL

RC 013781

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STUDENT MANUAL

HUNTER EDUCATION

MISSOURI DEPARTMENT OF CONSERVATION
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Parts of this manual have been adapted from the Hunter Safety and Conservation Program student manual published by the National Rifle Association of America and the Alberta Conservation and Hunter Education manual published by the Alberta Energy and Natural Resources Fish and Wildlife Division. Illustrations by Donna Drew were used from the Missouri Department of Conservation Firearms Safety module. Jim Duncan drew the illustration of the hand cannon on page 13.

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Acknowledgements

This manual is a team effort that began with the recognition that even a good program can be made better. Although Missouri's Hunter Education program has been designated one of the best in North America, it has been improved to include its own student manual and new teaching materials.

Evaluating the program began with the help of Gladney Davidson, former Hunter Education Specialist in the Federal Aid Division of the Fish and Wildlife Service. Gladney always sought new and better ways to deliver what he considered an extremely important message. The Hunter Education field lost a good friend when Gladney was killed in a car accident in 1981.

Someone has to start the ball rolling, which Bob Staton did when he agreed to undertake compiling and writing the student manual. Outdoor Skills Education Specialists and Protection Regional Staff Specialists helped review the material, which was taken in part from the National Rifle Association Hunter Safety and Conservation Program manual and Alberta Conservation and Hunter Education manual. This manual was also reviewed by administrators from the Department of Conservation and the Department of Elementary and Secondary Education. It has been approved for teaching in Missouri schools.

The success of the new program now rests with you who read this manual. If you study the message, learn the lessons, and practice them when you go afield, you will be a safe and responsible hunter—a credit to yourself, your sport, and Missouri's Hunter Education program.

How to use this manual

Learning can be fun and we hope you enjoy your hunter education class. This manual is designed to be used in a hunter education course or it can be a self-teaching workbook.

Objectives at the beginning of each chapter specify what you should be sure to know after you have studied that chapter. The review at the end of the chapter tests your knowledge of these objectives. The final evaluation examines your overall knowledge of the subject. If you have accurately filled out the end-of-chapter reviews, you will be ready for the test. If you have any questions, ask your instructor. Any comments you have on the manual or program should be sent to Outdoor Skills Education, Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102.

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ACCIDENT
PREVENTION
PEOPLE

The Overall Picture—Firearms Accidents and Hunter Education

Objectives for Chapter 1

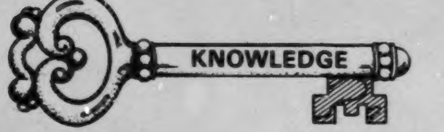
When you have completed this chapter, you should be able to do the following:

1. State why it's important to learn firearms safety.
2. List two major causes of firearms accidents.
3. Identify where firearms accidents most often occur.
4. List three ways that firearms are used for recreation.
5. Identify who is most responsible for preventing firearms accidents.

YOU the hunter and safety

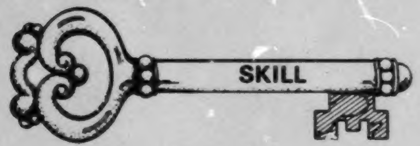
S-A-F-E-T-Y. The word safety may mean different things to different people. Let's say that it means "to be safe from injury." You'd think all people, at the very least, would be interested in their *own* safety. But this is not always the case. Let's look at some of the basic keys to safe gun handling.

Preventing accidents



KNOWLEDGE

Knowledge is always a key in preventing accidents. Before picking up a firearm, you should know how to handle it safely. You should know how the firearm operates and know and understand the primary rules for safe gun handling.

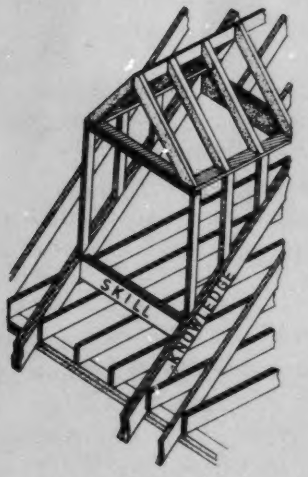


SKILL

Skill is another key in preventing accidents. You should learn the skills needed to operate a firearm before you ever pick one up. These skills include handling a firearm in many different situations in the home and field. Of course, the skill of accuracy is one all hunters should constantly strive to improve, both for safety and ethical reasons.

The basic knowledge and skills necessary for safe gun handling can be taught and learned. This is why hunter education was founded. But are basic knowledge and skills enough? No, of course not. You never grow too old or too smart to stop learning and improving, but a basic knowledge and set of skills should be a must before you ever pick up a firearm for *any* reason.

We will be covering in this hunter education course the basic knowledge and skills you need to be a safe hunter. The basics will serve as a framework on which to build more knowledge and skills over the years as you enjoy hunting experiences.



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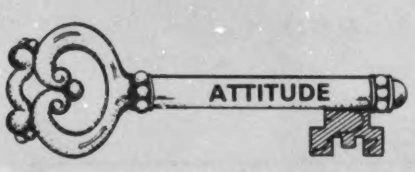
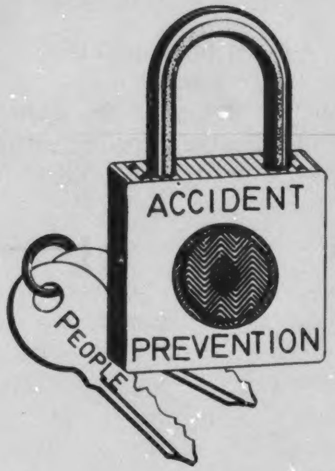
ATTITUDE





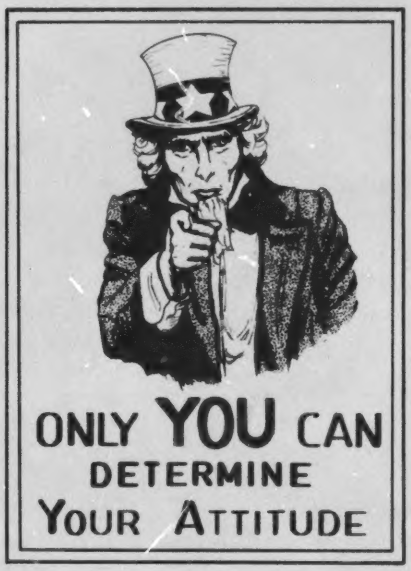
People hold the keys to accident prevention.

The last, but most important, key to preventing accidents is *attitude*. What is attitude? Attitude has been defined in this use as "disposition, opinion, mental set,"—in other words, the way you feel about things.

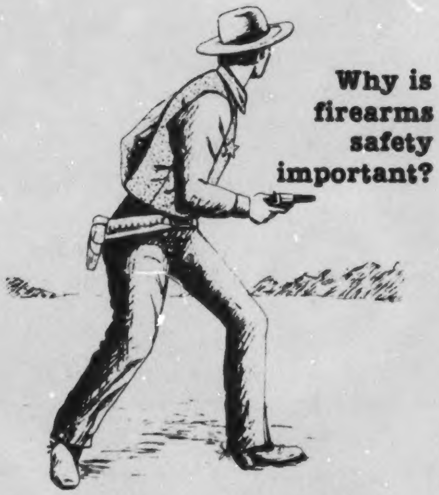
Someone with a poor attitude about firearms safety might say, "Safety isn't important to me. I'm too smart to have an accident." All the knowledge, skills, and firearms safety rules in the world won't prevent you from having an accident. Only *you* can prevent an accident. That's why your attitude is so important.

People hold the keys to accident prevention. But people must understand and accept the responsibility for safe gun handling on a full-time basis. Those who do will have a safe attitude.

You can be taught knowledge and skills, but you can't be taught to have a safe attitude. Only *you* can determine how you feel about firearms safety. Only *you* can determine your attitude.



Why is firearms safety important?



Westerns tend to glamorize how guns were used.

Many of us become fascinated with guns at an early age and our interest is reinforced by our environment. Television, movies, and books promote legendary heroes of the early west who rode tall in the saddle and shot from the hip. Westerns make shoot-outs and "law by gun" seem glamorous. The media also is filled with modern-day violence. Television programs show numerous assaults, murders, and robberies that are committed with a firearm. Toy guns, combat weapons, and space lasers line store shelves.

Without a more positive emphasis and proper instruction, we may grow up thinking that firearms are used only for violent crimes. We may avoid firearms because of an unrealistic fear; or we may treat firearms with a dangerous disrespect, using them only as toys for childhood games.

By learning firearms safety, you can protect yourself and others.

You are never too old or too young to learn firearms safety. You should know and understand basic firearms safety rules before you pick up a gun.

Even if you have not developed an interest in firearms, the chance of your encountering one is great. Firearms are kept in many homes—for protection, for hunting or other sport purposes, or as collector's items. You may encounter a firearm while rummaging in closets, exploring old trunks in attics, visiting friends or relatives, babysitting at the neighbors, or shopping in sporting goods stores.

If you know how to handle firearms safely and properly, their sudden discovery should be no problem or threat. After learning firearms safety you should be able to protect yourself and others. You will recognize when a firearm is being used or handled in an unsafe manner that may cause an accident.

Firearms accidents

Let's look at firearms accidents for a minute.

Accidents are caused by ignorance or carelessness on the part of people. A firearm cannot act or think. It is only as dangerous as the person who uses it. Firearms accidents can be prevented by knowing how the firearm operates and handling it carefully.

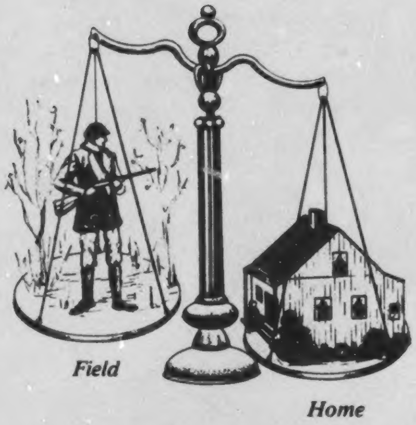
Accidental deaths caused by firearms are small in number compared to the total accidental deaths in the United States. In 1980 there were 1,700 accidental deaths caused by firearms in the United States. That same year there were 105,000 total accidental deaths by various causes in the United States. This means firearms accidents only accounted for about 2 percent of the total accidental deaths that year.

With those figures someone might say that firearms accidents, comparatively speaking, are not much of a problem. *WRONG!* As long as there is one death or injury, it is a problem.

All accidental deaths are tragic, but one important point makes hunting accidents even more tragic. Most people hunt with a relative or friend. Imagine trying to go through life knowing you shot and killed a relative or good friend, that you caused a death that was unnecessary and certainly preventable.

Even if there were no firearm fatalities, it would require a massive effort to keep it that way. This is why hunter education is so important to all of us!

Where do most firearms accidents occur—in the field or in the home? The answer—in the home—is surprising to many people. In 1980, 65 percent of the nation's 1,700 firearms accidental deaths occurred in the home. In Missouri 72 percent of the firearms accidental deaths were in the home. This proves that you don't have to be a hunter to benefit from firearms safety and hunter education training.



More firearms accidental deaths occur in the home than in the field.

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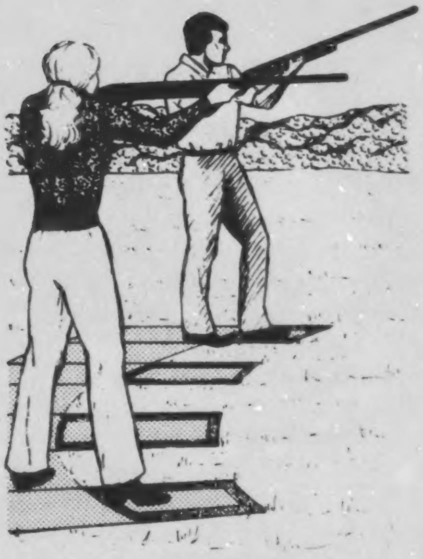
More and more people of all ages are receiving training in firearms safety and hunter education. Since the beginning of Missouri's hunter education program in 1957, more than 350,000 Missourians have received training in hunter education.

Are firearms safety and hunter education classes doing any good? Statistics tell us the answer is YES! The number of hunting accidents in relation to the number of permits sold has declined since Missouri's hunter education program began.

Hunting accident reports reveal that accidents where the person is the shooter are more frequent among people aged 10 to 19 (33 percent of Missouri's 1981 hunting related accidents). The next age group most involved as shooters in hunting accidents are 20-29 year olds (17 percent of 1981 hunting accidents). These statistics show us we are never too young to start learning how to handle firearms safely.

Recreational uses



Both men and women enjoy the shooting sports.

The chances are that many of us will develop or already have developed more than a passing interest in firearms. The shooting sports provide recreation and competition for both sexes. In no other competitive sport do men and women compete equally, side by side, as they do in the shooting sports. Both competitive and target shooting are enjoyed by many Americans each year.

The sport of hunting is as much a part of our heritage as are the basic rights guaranteed by our constitution. More than 800,000 Missourians take to the field each year to hunt the various game species found in our diverse state.

Another popular shooting activity is plinking, which is simply shooting makeshift targets such as tin cans. Collecting firearms and other related firearm hobbies are also popular activities. All of these activities increase the need for firearms safety and hunter education courses.

Missouri's hunter education program is still growing. Now a hunter education card allows anyone under 16 to take wildlife, except deer and turkey, without a resident hunting permit. Still, as long as there is any chance an accident may occur, the program must strive to reach more people.

Goals of program

Develop students who are:
1. Safe with firearms in the field and home.
2. Respectful of other people and property.
3. Law-abiding.
4. Aware of the importance of hunting as a management tool for the resources of the state.

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Glossary

ATTITUDE	A key to accident prevention—it is how you feel about something.
KNOWLEDGE	A key to accident prevention—it is your understanding of a subject based on information you have learned.
PLINKING	A popular shooting activity in which makeshift targets such as tin cans are used for practice.
SKILL	Another key to accident prevention—it is your ability to use your knowledge to perform a task, such as safely handling a firearm.

Review of Chapter 1

1. Check the reasons you think you should learn firearms safety.
   - ☐ To learn how to handle a firearm safely
   - ☐ To learn how to clean a firearm
   - ☐ To learn how to carry a firearm in the field
   - ☐ To learn how to transport firearms in a vehicle
   - ☐ To prevent accidents
   - ☐ To develop a better attitude
   - ☐ To learn to respect firearms
   - ☐ To have fun

2. What is the **most important** reason of those given above for learning firearms safety?

   ____

3. Where do most firearms accidents occur? ______________________________

4. List 3 ways that firearms are used for recreation.

   ____

   ____

   ____

5. The responsibility for preventing firearms accidents belongs most to:
   - a. Hunter education instructors
   - b. You
   - c. Other hunters
   - d. Conservation agents

6. Two major causes of firearms accidents are ______________ and ______________.

Firearms and Ammunition

Objectives for Chapter 2

When you have completed this chapter, you should be able to do the following:

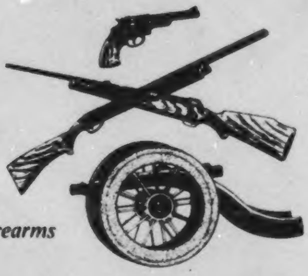
1. Define "firearm."
2. Identify the four major ignition systems.
3. Name the ignition system that made multiple-shot firearms possible.
4. Define and identify the terms action, stock, and barrel.
5. Explain the major difference between a shotgun and a rifle barrel.
6. Identify the five types of rifle and shotgun actions.
7. Identify the two major types of handgun actions.
8. List the components of rifle and shotgun ammunition.
9. Define "choke."
10. Describe when to release the "safety" on a firearm.
11. Identify a correct sight picture.
12. Distinguish the size of shot by number classification.
13. Describe the best way to store firearms and ammunition.

What is a firearm?

One definition says a firearm is "an instrument that fires a projectile using an explosive charge as a propellant."

Sound complicated? Let's look at examples and define a firearm in simpler terms.

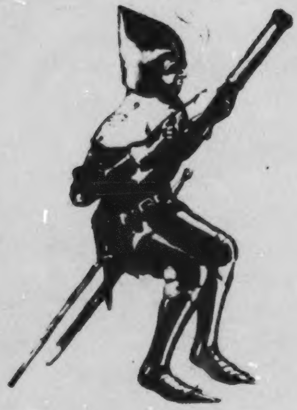
Examples of firearms are a cannon, rifle, shotgun, and pistol. A firearm is a tool that fires or shoots one or more projectiles. Examples of projectiles are a bullet, cannonball, or lead shot.



Examples of firearms

A firearm shoots a projectile by using an explosive charge. The explosive charge is gunpowder, which provides the fuel or power needed to move the projectile.

A firearm also uses an ignition system to ignite or light the gunpowder. Examples are a fuse, primer, or primer powder.



The invention of gunpowder made possible the development of firearms, such as this hand cannon which was used in the early 1400s.

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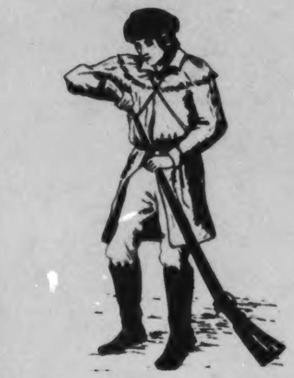


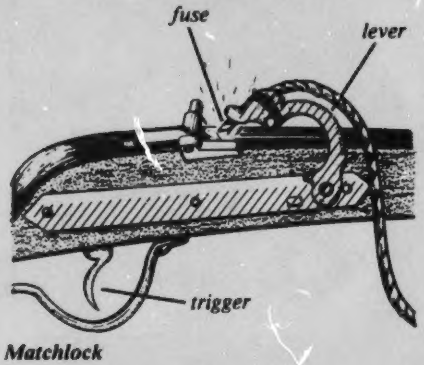
Early firearms were loaded from the muzzle end and called "muzzle-loaders."

The development of firearms was made possible after the invention of gunpowder. The first firearms were cannons. These were developed to use in warfare and were never used as hunting tools. When hand-held firearms were made, they became tools not only for warfare and protection, but also for hunting. These early firearms were loaded from the muzzle end, thus the term "muzzle-loader"—a term still used today.

If we look back at old firearms, we can see they have changed and improved.

The part of a firearm that has changed the most over the years is the ignition system. Remember, the ignition system is the part that serves to light the charge of gunpowder.

Early ignition systems



Matchlock

Let's look at some early ignition systems.

The first hand-held firearms used a cannon fuse. The shooter had to load the firearm, light the fuse, and aim it until the charge went off. As you can imagine, it was a slow process.

This led to the invention of the matchlock ignition system.

MATCHLOCK

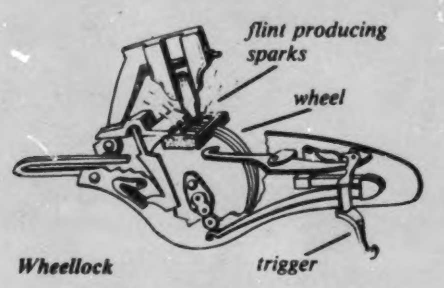
The matchlock firearm, which was the first to use a trigger, was carried to our country by the pilgrims. In this early firearm, a fuse was fastened to an S-shaped lever. The lower part of the lever was the trigger.

The fuse was lit and the gun aimed. As the trigger was pulled, it lowered the smoldering fuse to the priming powder. The priming powder then ignited the charge and the gun fired.

The matchlock guns were heavy and awkward, and they were hard to fire on rainy, windy days. Matches or cigarette lighters had not been invented yet, so lighting the fuse was a problem unless the shooter was close to a fire.

This system may be why our forefathers started trading guns to the Indians. The matchlock could not compete with a bow and arrow.

The bow and arrow was faster and more reliable than matchlock guns.



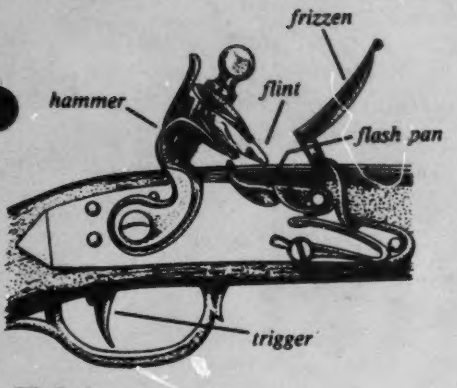
Wheellock

WHEELLOCK

The next ignition system to be invented was the wheellock.

The wheellock had a wind-up spring such as a clock or automatic fly reel. As the trigger was pulled the spring unwound and spun a steel wheel against a piece of flint rock or iron pyrite. This created sparks that lit the priming powder. The steel wheel and flint are still used in today's cigarette lighters.

This firearm never became popular in our country. Since many of them had over 20 moving parts, they were expensive to make and repairs were needed frequently.

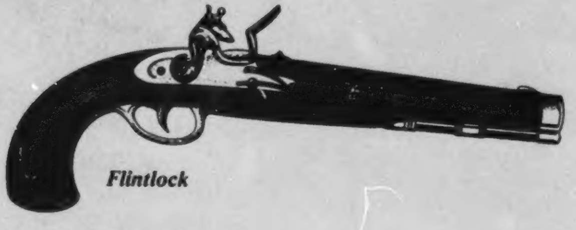


Flintlock

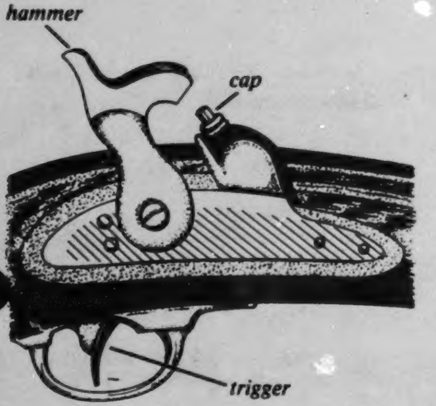
FLINTLOCK

The next ignition system, the flintlock, was used by our country's frontiersmen such as Daniel Boone. It consisted of a metal hammer-like device that held a piece of flint. As the trigger was pulled the hammer fell against a metal surface which created sparks that lit the priming powder, now protected by a covered pan.

The flintlock ignition system was rugged, trouble-free, and relatively inexpensive. It proved so popular it lasted for more than 200 years.



Flintlock



Caplock

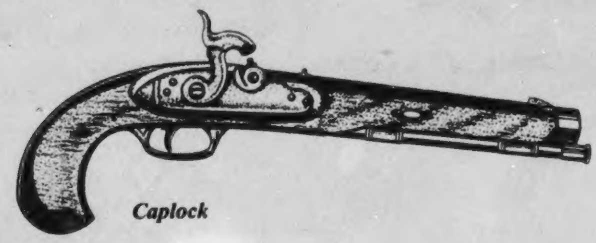
CAPLOCK (Percussion)

The mountain man era of our country's history brought us the forerunner of our modern firearms—the caplock ignition system. This system consisted of a copper cap which contained a new type of priming powder that would ignite when struck by a hard object (like the caps used in toy cap guns).

The cap was fitted over an anvil that was hollow. The hole in the anvil led into the barrel to the charge of powder. As the trigger was pulled, the hammer fell against the cap and anvil. The cap ignited and set off the charge and the gun fired.

This system was more dependable than the flintlock and made repeating or multiple-shot firearms possible for the first time.

The caplock system soon led to pinfire cartridges and then our modern-day rimfire and centerfire ammunition.



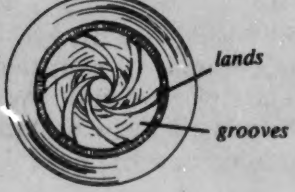
Caplock

Types of modern firearms

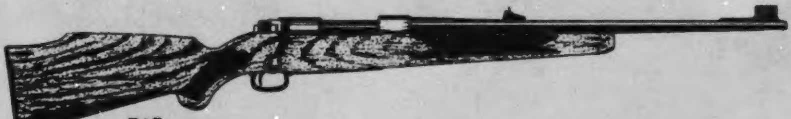
The three basic and distinct types of modern firearms are rifles, shotguns, and handguns. Rifles and shotguns sometimes are referred to as shoulder firearms or long arms. Handguns may be called pistols (derived from a town in northern Italy called Pistoia where they originated), revolvers, short arms, or side arms.

RIFLE

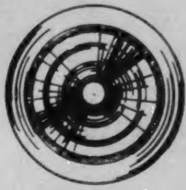
A rifle has a wood, plastic, or metal stock which is fitted to the shoulder and a relatively thick and heavy barrel. The primary distinction between a rifle and a shotgun is the *rifling,* or spiral grooves, in the barrel of the rifle. Almost always there is a metal or telescopic sight mounted on or over the barrel of a rifle.


lands
grooves

Rifle barrel with rifling



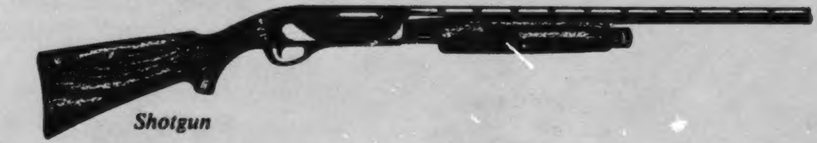
Rifle



Shotgun barrel (smoothbore)

SHOTGUN

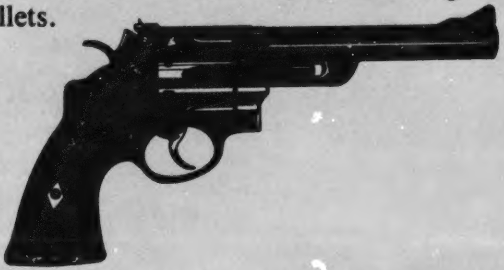
Although a shotgun resembles a rifle, its barrel is thin-walled and smooth and resembles a piece of steel tubing. Shotguns usually fire small round shot or pellets.



Shotgun

HANDGUN

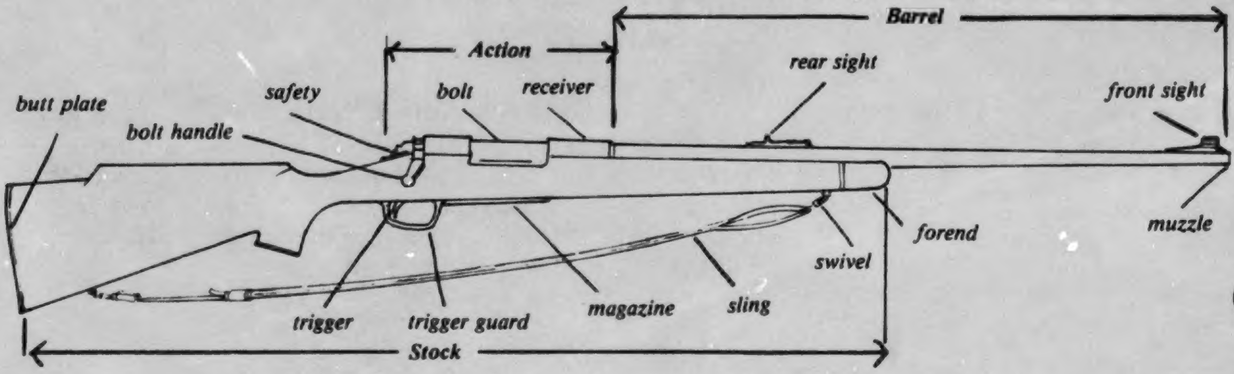
A handgun is a short firearm that can be held and fired with either one or two hands. Like a rifle, it has rifling in its barrel and fires bullets.



Handgun

Parts of firearms

As we all know, firearms have constantly changed and improved with time. However, with all their changes, firearms are still made up of the same three basic groups of parts, which are the action, stock, and barrel.


Barrel
Action
rear sight
butt plate
safety
bolt
receiver
front sight
bolt handle
forend
muzzle
swivel
trigger
trigger guard
magazine
sling
Stock

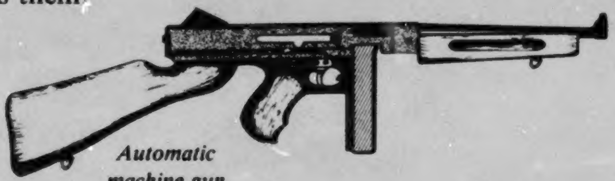
Actions

The action on old firearms was called the lock. This is where the term "lock, stock, and barrel" began.

The action is what makes the firearm operate. It contains the moving parts which load, fire, and eject the used cartridge case. Most actions are either single shot or repeating styles. While the single shot is loaded manually, the repeater has cartridges held in a ready position by a magazine or clip. The cartridges are chambered as the action is operated, and used cartridges are ejected.

Firearms usually are named by their particular action design. The five basic actions are bolt, lever, pump, hinge, and semi-automatic. Some handguns have a revolving cylinder (hence the name "revolver") into which cartridges are loaded.

True automatics or "machine guns" like those seen in movies portraying gangsters of the 1920s and '30s may be illegal for private ownership. Only specially licensed collectors, the military, and certain police agencies may possess them.

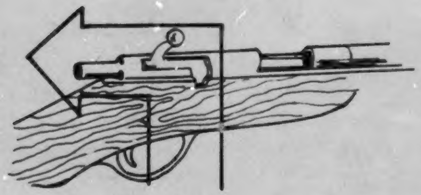


Automatic machine gun

BOLT ACTION SHOULDER FIREARMS

A bolt action rifle works much like an old-fashioned door bolt. It is one of the strongest and simplest actions to use. To open the action, lift the bolt handle up and pull it all the way back. If the firearm is loaded, the cartridge should come out when the bolt is pulled back. To make sure, however, look into the open action. When the bolt is open, the rifle cannot fire.

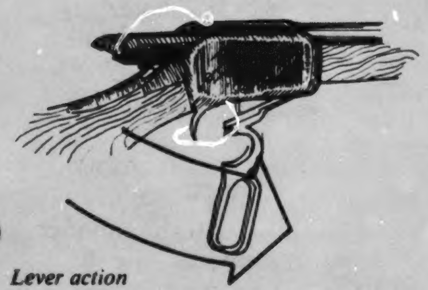
Bolt action firearms that are repeaters will have a magazine that feeds additional rounds into the action. The magazine should be checked and emptied when handling the firearm. You can make sure any bolt action rifle is safe by removing the bolt and storing it separately.



Bolt action

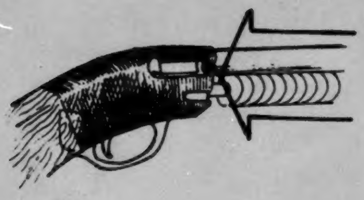
LEVER ACTION SHOULDER FIREARMS

Lever action rifles, often seen in western movies and television shows, are still made today. The action works by pulling the trigger guard, or lever, downward away from the stock. This moves cartridges from the magazine into the chamber for firing. When you pick up a lever action rifle, flip the lever down and away from you, opening the action so the firearm cannot be fired. It is more difficult to determine if these firearms are loaded because the action is more complicated. To make sure the magazine is empty, keep pulling the lever until no more cartridges are ejected. Then with the action open, look into the chamber and magazine.



Lever action

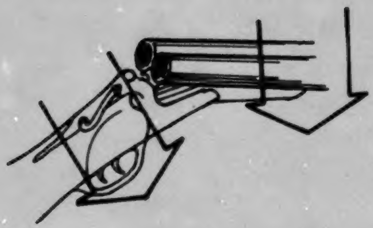
PUMP ACTION SHOULDER FIREARMS


Pump action

A pump action rifle or shotgun also may be called a slide or trombone action because the wooden forend is pumped back and forth to work the action.

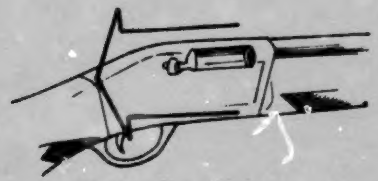
To open the action, pull the forend back toward the trigger guard. If the gun is cocked, loaded or not, a release must be pressed before the pump will operate. The release usually is located just in front of or just behind the trigger guard. When the action is open, examine it to make sure it isn't loaded. Also check the magazine to make sure it is unloaded.

HINGE ACTION SHOULDER FIREARMS


Hinge action

Hinged or break-open shotguns are the safest for quickly finding out if a firearm is loaded. The hinge on a hinge action firearm operates like the hinge on a door. To open the action, push the release lever on top of the firearm to the side. This allows the action to break open and extract cartridges. The open action reveals at a quick glance whether the firearm is loaded or empty. Hinge action firearms have no magazine.

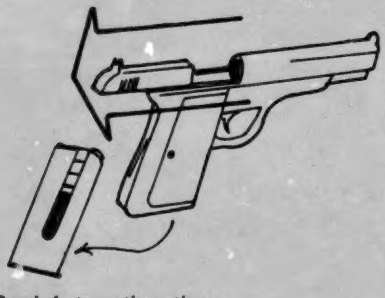
SEMI-AUTOMATIC SHOULDER FIREARMS


Semi-Automatic action

Semi-automatic rifles and shotguns sometimes are incorrectly called "automatics"; instead, they are autoloaders. Fully automatic firearms continue to fire as long as the trigger is pulled and there is ammunition. With semi-automatic actions, the trigger must be pulled to fire each shot.

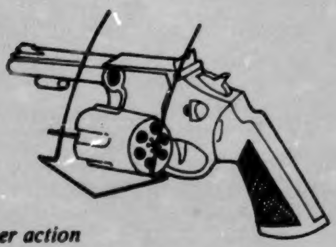
The action is opened by pulling back the handle. Some semi-automatics will lock open when the handle is pulled all the way back, but others must be held open to see if they are unloaded. While the action is open, locate the magazine and check to be sure it is unloaded. With those models that lock open, be careful not to accidentally trip the release that springs the handle shut.

SEMI-AUTOMATIC HANDGUNS

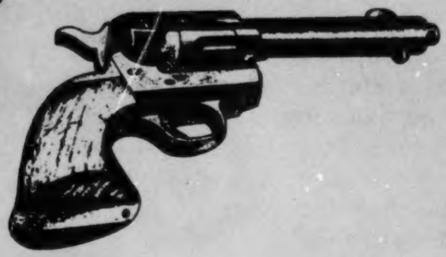

Semi-Automatic action

This action operates much the same way as the semi-automatic rifle and shotgun. The magazine is located in the handgun's grip and is released by pushing a button. To open the action, grasp both sides of the slide with one hand and pull it back. Check to make sure no cartridges are in the chamber. If the slide will not lock open with the magazine removed, empty the magazine and replace it in the firearm so the slide will lock open.

REVOLVER HANDGUNS


Revolver action

The magazine of a revolver is a cylinder that turns as the firearm hammer is cocked or the trigger pulled. The cylinder contains chambers, usually six, although the number may vary from five to nine. Cartridges are loaded, one in each chamber, and are ready to fire as the cylinder turns, lining up each loaded chamber with the barrel.


"Burying money"

Revolver actions open differently depending on the make and model of the firearm and cylinders may rotate in different directions. On some, the cylinder swings out from the frame. Other revolvers break open either up or down on a pivot. In both of these the complete cylinder is exposed and it is easy to see if it is loaded. Another type of revolver has a cylinder that doesn't swing out or break open, but is loaded through a loading gate on the side. The hammer must be pulled back slowly to "half cock" position. This can be determined by the first click which is heard as the hammer is drawn back. (This may not apply to some recent single-action revolvers.) This frees the cylinder to rotate. If cartridges are in the cylinder, they can be pushed out using the ejector rod located alongside or under the barrel.

One important safety point to remember when handling an older model single-action revolver is that these handguns were not equipped with a hammer block. As a result, they can go off if the hammer receives a hard blow. The best way to handle one of these revolvers is to always have the hammer resting on an empty chamber. This is why people in the 1800s carried a rolled up $10 bill in one chamber. This chamber was always kept under the hammer for safety. The $10 also could be used as "burying money," should the gun owner meet an untimely death.

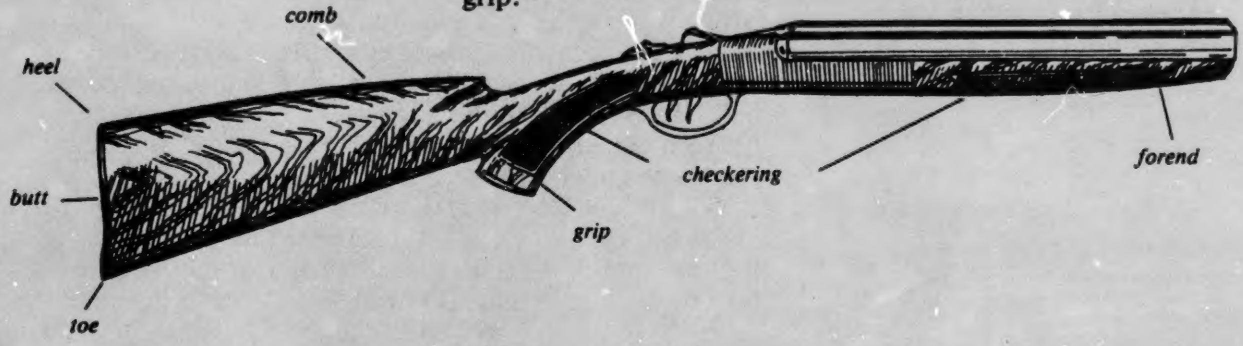
Revolvers are manufactured in single-action models and others capable of both single-action and double-action firing.

With a single-action revolver, the hammer must be pulled back or cocked before each shot. The trigger then can be pulled with only three to five pounds of pressure. On a double-action revolver, pulling the trigger cocks the hammer, rotates the cylinder, and fires the gun all at the same time. But as much as 8 to 12 pounds of pressure are required to pull the trigger. The heavier the trigger pull, the harder it is to make a well-placed shot.

While revolver and semi-automatic are the most common actions, some handguns are made with hinge and bolt actions.

Stocks

The stock is the "handle" of the firearm. In the handgun, the stock is the part of the frame that includes the grip.

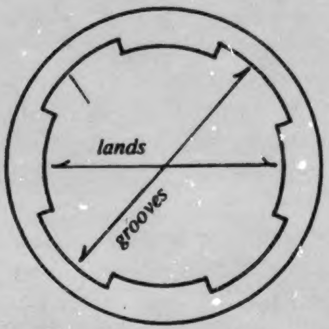


Firearms vary in the type or size of stock attached to the steel. Stock dimensions and fit are important with shotguns because they are pointed rather than aimed and shooting is done very quickly. The stock must fit so the shooter's eye is positioned correctly over the barrel.

Many less expensive modern firearms use hardwood stocks. Most firearm owners prefer a stock of heartwood American walnut which is more durable and attractive. Today quality imported firearms use one of the European walnuts.

Checkering, or diamond-shaped grooves cut by hand or by machine in the stock, decorates the firearm and helps keep hands from slipping when handling the stock. Good quality checkering and fine burl wood stocks make a quality firearm even nicer.

Barrels



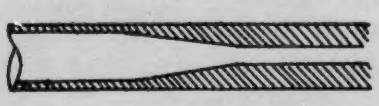
The barrel is the metal tube through which the projectile passes when the firearm is fired. The hole through the barrel is called the *bore.* Rifle and handgun barrels differ from shotgun barrels—they have thicker walls and contain spiral grooves in the bore called *rifling.* The ridges of metal left between the grooves are called *lands.* First used in the Kentucky or Pennsylvania rifle, rifling causes the bullet to spin or spiral like a football. This makes it more stable and gives it greater accuracy and range. The grooves can be seen by looking down the barrel of any rifle or handgun.

Shotgun barrels, on the other hand, are relatively thin because the ammunition used in shotguns develops much less pressure. They often are called "smoothbores" because the inside surface is smooth.

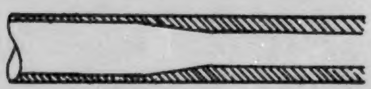
Shotguns fire large numbers of small shot in a dispersed pattern. To control the spread of the shot after it leaves the barrel, shotguns are constricted, or *choked,* about one and a half inches from the end of the barrel. A choke is to a shotgun what a nozzle is to a garden hose. It determines at what distance the shotgun will be most effective. Choke designs vary depending on the manufacturer and the method used. From the tightest to the most open, the common chokes are *full, modified,* and *improved cylinder.* Cylinder bore means no choke.

The *caliber* of rifles and handguns normally is determined by measuring the diameter of the bore before the rifling has been cut, or the distance between opposing lands after it has been cut. Caliber generally is expressed in hundredths or thousandths of an inch, and sometimes in millimeters. A .22 caliber measures 22/100 of an inch between lands. In some cases the caliber is actually the groove or bullet diameter.

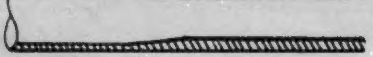
With one exception, shotguns are classified by *gauge* instead of caliber. Gauge is determined by the number of lead balls, each measuring the diameter of the bore, it would take to weigh one pound. For example, find a lead ball that



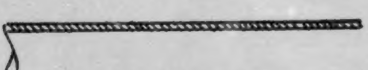
Full choke is the most constricted and keeps the shot closest together.



Modified choke

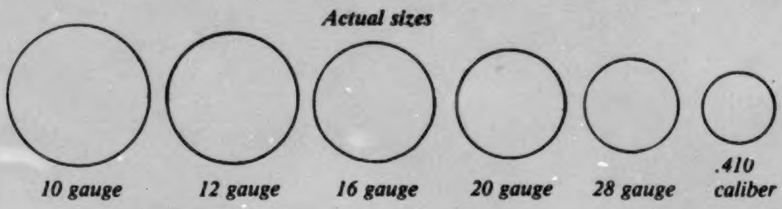


Improved cylinder choke



Cylinder bore means there is no constriction in the barrel and the shot spreads quickly as soon as it leaves the barrel.

is the same diameter of a 20-gauge shotgun barrel and it will take 20 of those balls to make one pound. The larger the gauge number, the smaller the bore diameter. The exception is the .410 bore which is actually the width of the bore measured in thousandths of an inch. The .410, therefore, is really a caliber rather than a gauge. If a .410 was measured by gauge it would be a 67½ gauge. Modern shotgun gauges, starting with the largest, are 10, 12, 16, 20, 28, and .410.

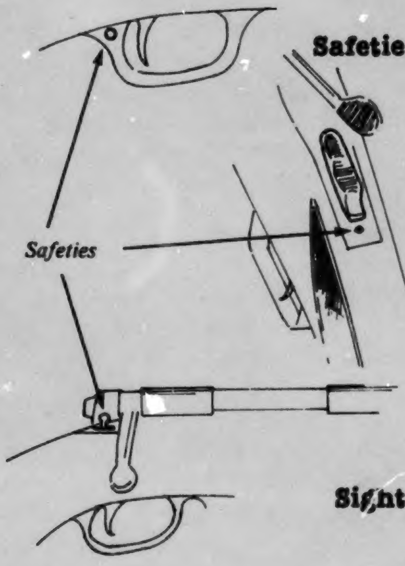


The larger the gauge number, the smaller the barrel.

Trigger

The trigger is the part of the action moved by the finger to fire a gun. Keep your hands and fingers away from the trigger until you are ready to shoot.

Safeties



The safety blocks the action or trigger of the firearm so the gun cannot be fired when the safety is in the "on" position. It is located on the firearm so your trigger hand can reach it quickly and easily.

When a firearms safety is "on," the gun supposedly cannot fire. The safety, however, should not be relied upon to prevent accidental firing. Always remember that safeties are mechanical devices and may fail to work. Firearms with the safety on have been known to fire when dropped or hit against another object. (Perhaps a better name for the safety would be an O.F.R.O.S. or Only-Fools-Rely-On-Safeties.)

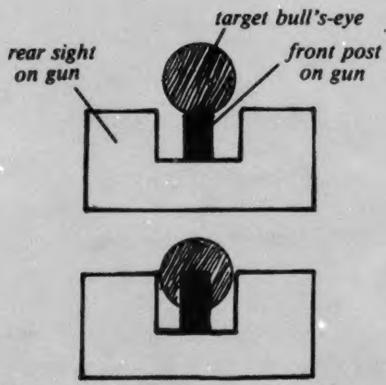
When handling a gun, be sure the safety is on. Release the safety only just before you fire.

Sights

The sights on firearms are used to guide the eye in aiming the gun. They are important additions to rifles and handguns because they help shooters to be more accurate. Rifle sights are classified as open, aperture (peep), or telescopic. Handguns normally have open sights, but scoped pistols and revolvers are becoming more popular.

OPEN SIGHTS

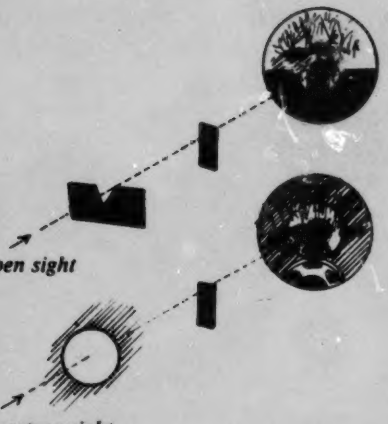
Open sights are the most common, the simplest, and usually the least expensive. Although they can be adjusted, the methods generally are crude. A proper sight picture using an open sight is shown here.



Either of these is a correct sight picture using an open sight.

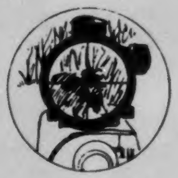
APERTURE (PEEP) SIGHTS

The aperture sight on rifles offers greater accuracy. You also can make finer and more controlled adjustments with it.



Open sight

Aperture sight



Telescopic sight

TELESCOPIC SIGHTS

Telescopic sights are the most advanced and accurate for shooting at targets or game far away. The shooter simply looks through the scope and sets the cross hairs, post, or dot on the target and fires. Telescopic sights also provide magnification which makes the target appear closer, and they gather light making it easier to see the target.

These scopes should not be used to identify your target, however. To do so might mean aiming your gun at something you don't want to shoot.

Most scopes enlarge the image from two times (2X) for brush shooting up to 20 times (20X) for target shooting.

SHOTGUN SIGHTS

Sights are not nearly so important to a shotgun shooter who does not aim but rather "looks" down the barrel at the target, keeping both eyes open. The shooter uses the shotgun to "point" and follow a moving object.

Usually shotguns have a single round bead on the top of the barrel near the muzzle to help direct vision. Some shotguns have a second smaller bead about halfway back on the barrel. Ventilated ribs (for heat wave dispersion) on top of the barrel also can be used as a sight plane. When a shotgun is used like a rifle, open or scope sights sometimes are used.

Pellet and BB guns

Pellet guns and BB guns by definition are not truly firearms. They do not use an explosive charge to propel the pellet or BB. Instead they use compressed air or gas or sometimes a spring.

Pellet and BB guns are excellent to buy and use first because they are inexpensive to shoot and are great for learning basic marksmanship skills.

Never, however, treat a pellet or BB gun as a toy. These guns shoot a pellet or BB at several hundred feet per second. Many shoot hard enough to penetrate a tin can and are capable of killing small game. They are *not* toys and should be treated the same as any firearm.

Ammunition

Without ammunition, a firearm is merely a piece of wood and metal. Although it may be decorative hanging above the fireplace, it has little function until it is loaded.

The discovery of gunpowder, one of the essential components of ammunition, can be traced to the Chinese. Roger Bacon, however, is usually given credit for its discovery because he was the first to publicize the recipe. The basic black powder mix of charcoal, sulphur, and saltpeter did not change much from the 1200s to almost 1900.

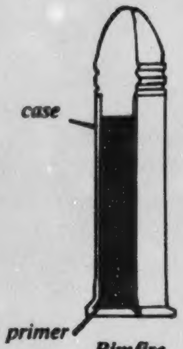
Black powder had its drawbacks. Bullet speed was never great because the powder burned so fast that gas pressure decreased rapidly. The billowy puff of smoke gave away a soldier's hiding place and hunters couldn't tell if they had hit their mark. The residue from the powder also fouled barrels and eroded the metal parts of firearms.

A new smokeless powder was the result of experimenting with guncotton and nitroglycerin. Today there are many types of smokeless powders. The basic differences are the burning rate and the amount of gas produced. Handguns, with their short barrels, need a powder that burns quickly at low pressures. High-powered rifles need a slower burning powder that builds pressure to increase the force as the bullet leaves the barrel.

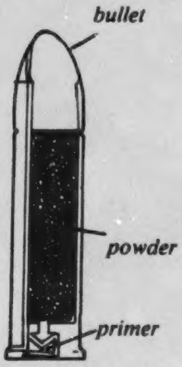
About the time of the Civil War, all ammunition components were put into one cartridge. This was handier and easier than loading powder and shot separately and then igniting with a percussion cap.

Basic components of ammunition

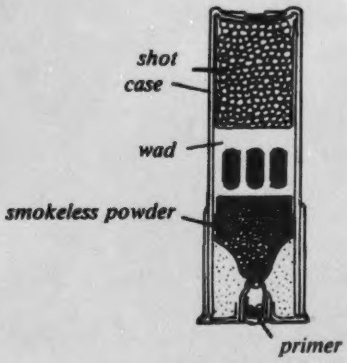
All present-day ammunition has at least four basic components.



Rimfire Cartridge



Centerfire Cartridge



Shotgun Shell

CASE

The case is the brass, steel, copper, paper, or plastic cylinder into which all other components are assembled.

PRIMER

The primer contains a chemical mixture which explodes when struck by the firing pin. The violent flame of the primer explosion serves as a "match" to ignite the powder charge.

In all modern ammunition except the rimfire cartridge, the primer is separate and located in the center of the base of the cartridge. These are called *centerfire* cartridges or shells. In the *rimfire* cartridge, the primer compound lies in a ring around the inner edge of the metal casing at the base of the cartridge.

POWDER CHARGE

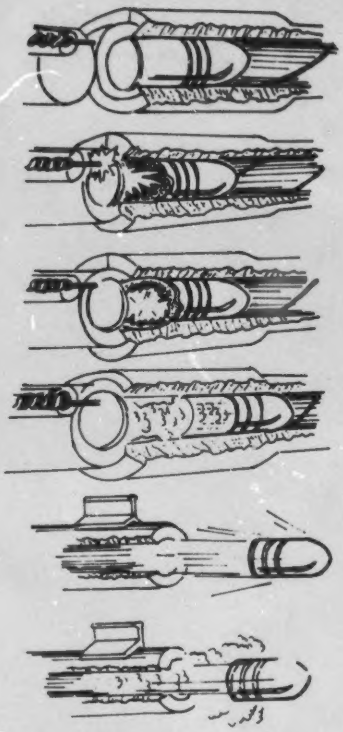
When ignited, the powder charge produces great quantities of gas which propel the bullet or shot charge through the barrel.

BULLET OR SHOT CHARGE

In rifle and handgun ammunition, the final component is a lead or metal-jacketed projectile called a *bullet*. In shotgun ammunition, the *shot charge* is a number of lead or steel shot pellets. Shot pellets are available in various sizes. Shotgun slugs are made of lead and are used for hunting deer and other large game with a shotgun. In a shotgun cartridge, a wad is used to separate the powder and shot charges and to prevent the gas from escaping through the loose shot as it travels out the barrel.

How ammunition fires

RIFLE



1. Cartridge is in chamber.
2. Firing pin strikes and explodes primer which in turn ignites powder.
3. Gas from burning powder expands in case.
4. Gas pushes bullet out with force.
5. Bullet leaves barrel.
6. Bullet and escaping gases produce a "bang."
7. Bullet hits target and expands.

SHOTGUN

1. Shotshell is in chamber.
2. Firing pin strikes and explodes primer which in turn ignites powder.
3. Gas from burning powder expands in plastic body of shell.
4. Gas pushes the shot cup or wad against the shot; the wad and shot leave the plastic body of the shell.
5. Shot and wad leave the barrel; escaping gases produce a bang.
6. Shot and wad separate; shot begins to spread out as pattern opens.
7. Shot hits target and target breaks.

Types of ammunition

CARTRIDGES

There is no general rule that governs the common designations of American metallic cartridges. While Europeans have followed a fairly strict system of identifying cartridges by metrical designations, the American system is really no system at all. Calibers are generally measured in hundredths or thousandths of an inch and may be expressed either as bore or groove diameter. For example, bore diameter is used to identify the .30 caliber class of cartridges, but all of them fire bullets measuring .308 of an inch, which is the actual groove diameter. Others are designated by groove diameter, such as the .243, .257, and .264.

Some cartridge names have multiple parts which have various meanings. The famous .30/06 is so named because it is a .30 caliber cartridge first developed in 1906. The .250/3000 indicates a certain .25 caliber cartridge that produced a muzzle velocity of 3000 feet per second. The .22/250 indicates a cartridge originally made from a .250/3000 case necked down to fire a .22 bullet. The list goes on and on.

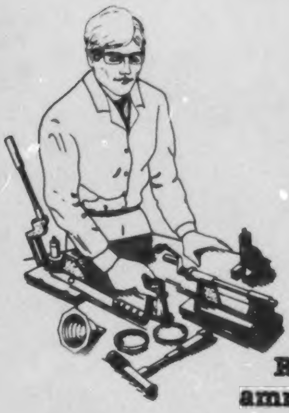
American handgun cartridges follow the same pattern, or lack of it. The .357 magnum cartridge is named from the groove diameter of the barrel. What we call a .38 isn't a true .38 caliber at all, neither in bore nor groove diameter. In reality, .38 and .357 bullets and barrels are exactly the same diameter.

When handling firearms, be absolutely certain that your ammunition and firearm are intended for each other, since cartridges with similar names may not be at all similar. The only way to understand American cartridges is to learn each one individually. Don't depend on the system because there isn't one.

SHOTGUN SHELLS

Shotshells generally are much larger than metallic cartridges. Shotgun shell size is measured by gauge (the number of lead balls the diameter of the bore which would weigh one pound). Commonly used shotshells are 10, 12, 16, 20, and 28 gauge. The 12-gauge shell is the most common today. The exception to the rule is the .410 which is a caliber, not a gauge. The gun used for the .410 is the smallest of all shotguns manufactured and sold in the United States today.

Shotgun shells generally are made of plastic with metal reinforcement at the base. Plastic has become more popular than paper because it resists swelling from moisture and extends the reloading life of the shell.

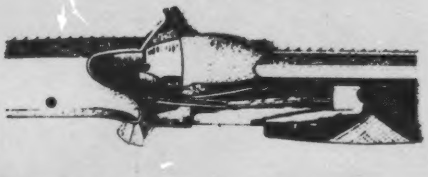


Reloading ammunition

Follow directions carefully when reloading.

Reloading shells and cartridges has become popular and will save money; however, no reloading should be done without proper instruction and equipment. The reloader's handbook instructions should be followed exactly. It's not always wise to trust someone else's reload unless you trust the reloader.

Selecting ammunition

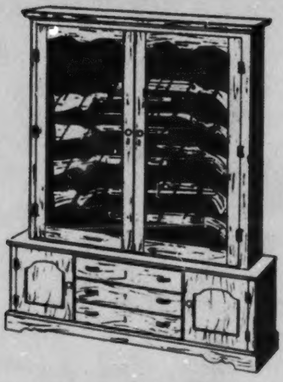


Using the wrong ammunition can damage your gun and be dangerous.

The wrong shell or cartridge used in a firearm can cause gun damage and personal injury. If the ammunition seems too loose or tight it should not be used. Shotguns and rifles have their gauge or caliber marked on the barrel. Many shotguns shells are color-coded to help with identification. Color-coding is not universal, however, so it should not be relied upon.

Ammunition also should be selected according to its intended use. If the ammunition is being used for hunting, the hunter should know what is available, its range and effectiveness, and its normal or intended use.

Storing ammunition



Firearms and ammunition should be locked up separately.

Lock up all ammunition, preferably in a separate area away from firearms. Keep the key in a separate location.

Black powder is highly volatile and special precautions need to be taken with its handling and storage. The smallest spark can ignite the unstable powder. Never smoke around black powder (or any other powder) and keep it away from any fire. Store it in a cool, dry area away from any heat or possible flame.

All ammunition, in fact, should be kept away from fire or heat sources. No ammunition should be left out where it can be handled by inexperienced people.

As with rifle and pistols, shotguns are made for a specific ammunition. Look at the picture of the box of shotgun shells. It's important to know what the numbers mean.

The **12 Ga.** indicates those shells are 12 gauge.

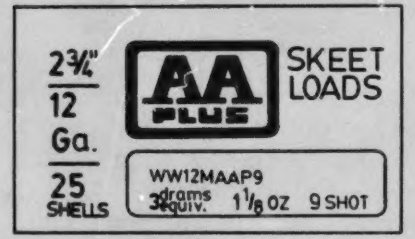
The **3** indicates how heavy the charge of powder is. This is measured in dram equivalents equal to black powder. In this case it is 3 drams equivalent.

The **1 1/8** indicates there are 1 1/8 ounces of shot in the shot charge.

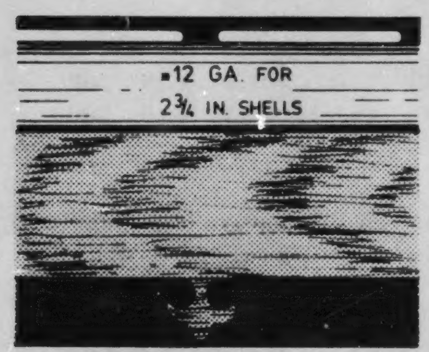
The **9** indicates the size of the shot is 9. The common shot sizes are as follows: 00B—0B—1B—2B—3B—4B—BB—2—4—5—6—7½—8—9, with "00B" being the largest in diameter and "9" being the smallest.

The 2¾" indicates how long the shot shell case is when it's uncrimped or fired. This is important to know. Shotgun barrels should be marked to indicate the gauge and length of shell. Never shoot a shell longer than the shotgun indicates because too much pressure can be created and the gun could blow up. An example would be using 3" shot shells in a shotgun marked 2¾. A gun marked 3" can shoot 3" or 2¾" shells. You can use shorter shells but *never* longer shells, and *never, never* the wrong gauge shells.

The powder charge and shot size of your ammunition should be determined by your game or target.



Know what the numbers on the box mean.



Shotgun barrels should be marked with the gauge and length of shell.

Glossary

ACTION	The "working mechanism" of a firearm that loads, fires, ejects, and reloads a cartridge.
AMMUNITION	A *specific* cartridge or shell that houses the components necessary to fire a bullet or shot charge in a *specific* firearm. The ammunition *must match* the firearm!
APERTURE (PEEP) SIGHT	A sighting system primarily used on rifles with a small hole in the rear sight that the shooter looks through to find the front sight. The front post or circle then is aligned with the target. This sight system is accurate but you need good light to use it.
AUTOMATIC	A firearm that continuously chambers, fires, and ejects as long as the trigger is depressed.
BARREL	The metal tube, usually steel, through which the projectile passes.
BB GUN	A rifle or pistol that propels a BB by using either compressed air, gas, or a spring.
BEAD SIGHT	The small round piece of metal or hard plastic on the tip of the barrel that is used with a rear sight for aiming.
BORE	The hole in the barrel through which the shot or bullet passes.
BULLET	The part of the cartridge, usually made of lead and sometimes covered or jacketed with metal, that becomes the projectile when the gun is fired.
CALIBER	The diameter of a rifled barrel measured from land to land in fractions of an inch. It also designates the ammunition that the firearm shoots.
CAPLOCK	An ignition device developed in the early 1800s that displaced the flintlock. A copper cap containing a pellet of detonating compound was placed over a hollow nipple and when struck by a hammer ignited the main charge in the barrel.
CARTRIDGE	A tube of metal, paper, or both, containing primer, powder, and bullet for rifles and handguns and primer, powder, wads, and pellets for shotguns.
CENTERFIRE	A cartridge with the priming compound contained in a separate cup located in the center of the bottom of the case. The case is thicker and can withstand more pressure.

CHECKERING	A decorative carving on wooden gun stocks that helps the shooter grip the gun.
CHOKE	A constriction of the shotgun barrel, usually in the last few inches near the muzzle, that determines the pattern of the shot.
DOUBLE ACTION	The capability in handguns of both cocking and dropping the hammer to fire the gun by a single pull of the trigger.
DRAM EQUIVALENT	The equivalent amount of smokeless powder in each shotshell that would produce the same pressure and velocity as an indicated number of drams (a weight measurement) of black powder. It does not indicate how much smokeless powder is in the shell!
EJECTOR	The device that casts the spent cartridge free of the firearm.
FIREARM	An instrument that fires a projectile using an explosive charge as a propellant.
FIRING PIN	The part of the action that strikes and detonates the cartridge primer. It may be attached to the hammer or in a separate position.
FLINTLOCK	An action that uses quartz (flint) hitting against a steel battery (frizzen) to shower sparks into a flashpan, thus igniting the powder charge through the flashhole and firing the gun.
GAUGE	The bore diameter of a shotgun determined by the number of lead balls, each measuring the diameter of the bore, it would take to weigh one pound.
GROOVE	Machine-made spiral cuts inside the length of a barrel which grip and begin the spinning motion of a projectile. Commonly referred to as rifling.
GUNPOWDER	Any of various powders used as propelling charges in guns.
HAMMER	The part of the action that drives the firing pin forward to contact the primer.
HANDGUN	Any firearm designed to be fired with one, or both, hands.
HINGE	A shotgun action that operates like the hinge on a door with the barrel hinged to the frame. It is the safest action for quickly finding out if the firearm is loaded.
IGNITION SYSTEM	The means of igniting or setting fire to gunpowder.
LAND	In a rifled barrel, the uncut or raised portion between grooves.

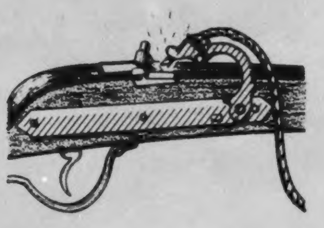
LEVER	An action that works by pulling the trigger guard down and away from you, which opens the action.
LOCK	The firing mechanism of a muzzle-loader, usually referred to as the action in modern firearms.
LONG ARM	A name sometimes used to refer to rifles and shotguns. Also called shoulder firearms.
MAGAZINE	The container that holds cartridges in position to be loaded into the chamber of a repeating firearm.
MATCHLOCK	The first mechanical system for firing a gun, it used a smoldering "match" of flax or hemp to ignite the priming powder, which ignited the charge and fired the projectile.
MUZZLE	The forward end of a barrel.
MUZZLE-LOADER	A firearm loaded through the muzzle.
OPEN SIGHT	A sight that is not a full circle and is the most common, simplest, and usually least expensive.
PELLET GUN	By definition, not a true firearm because compressed air, gas, or a spring is used to propel the pellet instead of an explosive charge. *Never* treat a pellet gun as a toy!
PISTOL	A handgun that may be single shot, repeating, or semi-automatic.
PRIMER	A cap containing a small amount of explosive used to set fire to the main powder charge of a firearm; located in the center or rim of cartridge cases.
PRIMING POWDER	Powder that when ignited projects the ammunition forward and out of a firearm.
PROJECTILE	Any object such as a bullet that is propelled from another object such as a gun, when it is in flight.
PUMP	An action that is also called a slide or trombone because the wooden forend is pumped back and forth to work the action. If the gun is cocked, loaded or not, a release must be pressed before the pump will operate.
RELOADING	A method of reusing cartridge cases by hand loading ammunition. No reloading should be done without proper instruction and equipment.
REVOLVER	A handgun with a cylinder-shaped magazine that turns as the firearm hammer is cocked or the trigger pulled. The action is so named because the cylinder "revolves" as the gun is fired.

RIFLE	A firearm supported from the shoulder when fired. It is designed to fire a single projectile or bullet through a rifled barrel.
RIFLING	Spiral grooves in the barrels of rifles and handguns that grip the bullet causing it to spin, which stabilizes it in flight.
RIMFIRE	A cartridge of soft metal with the priming compound enclosed within the rim. Because of its softness, it is usually of a low pressure caliber.
SAFETY	A device which stops a gun from firing accidentally.
SEMI-AUTOMATIC	Firearms that load automatically, but the trigger must be pulled to fire each shot.
SHELL	Container that holds shot and other parts of ammunition for shotguns.
SHOTGUN	A smoothbore shoulder gun designed to fire shotshell.
SIGHTS	One of several different types of devices on firearms used to guide the eye in aiming the firearm.
SINGLE ACTION	A revolver design that requires the hammer to be cocked manually for each shot.
SLING	A strap used to carry a firearm; also helps in shooting a rifle.
SMOKELESS POWDER	Propellant used today for small arms ammunition. It is a stable and non-explosive fuel that burns with a minimum of ash and smoke.
STOCK	The part of a shoulder firearm by which it is held for firing and into which the metal parts are fitted.
TELESCOPIC SIGHT	The most advanced and accurate sight which magnifies the target and gathers light making it easier to see. It should *not* be used to identify the target.
TRIGGER	The part of a firearm that releases the firing pin.
VELOCITY	The speed of a projectile usually measured in feet per second.
WAD	A disc used to separate powder from shot, seal gases behind the shot, or hold shot together in the barrel.
WHEELLOCK	An expensive and complex early action that used a serrated wheel turned by a strong clock-like spring to spin it against iron pyrite, which sent a shower of sparks into the priming pan.

Review of Chapter 2

1. A firearm is an instrument that __________ a ________________ using an ____________________ charge as a ____________________.

2. Label the following ignition systems.



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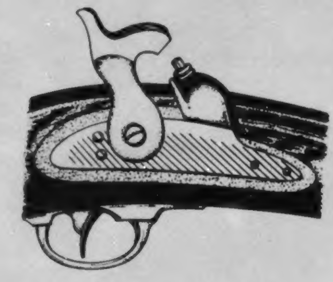

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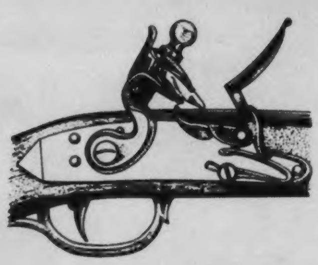

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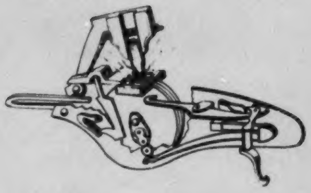

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3. Which one of the above ignition systems made repeating firearms practical?

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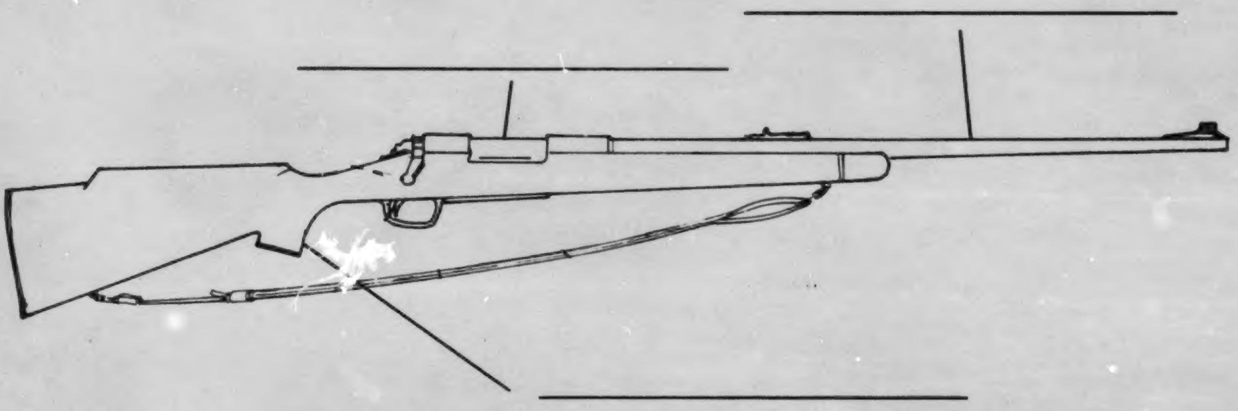
4. Label the action, stock, and barrel.



The action is ____

____

The stock is ____

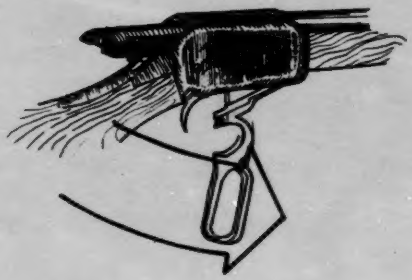
____

The barrel is ____

____

5. A rifle barrel is ____________ than a shotgun barrel and has ________________ or ____________ cut into it.

6. Label the five types of rifle and shotgun actions.



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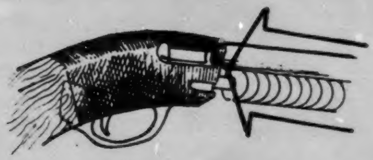

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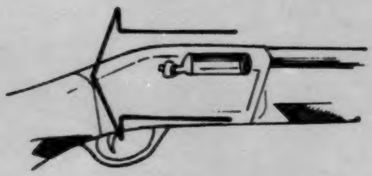

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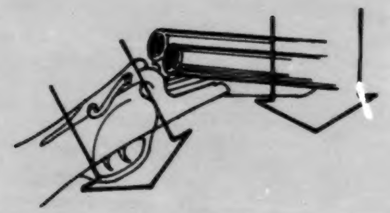

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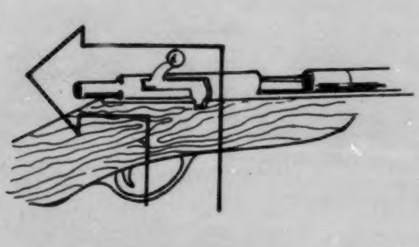

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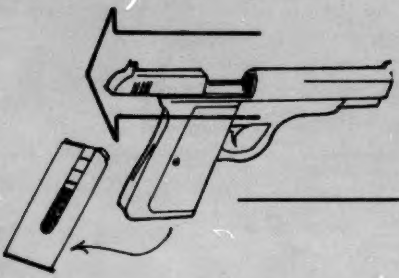
7. Label the two major types of handgun actions.



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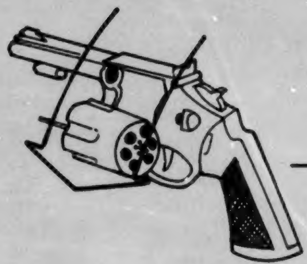

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8. Modern ammunition is made up of the following four basic components:

a. ____

b. ____

c. ____

d. ____

9. Shotgun ammunition has an additional component which is a ______________, and is used to separate the powder from the shot and prevent gas from escaping.

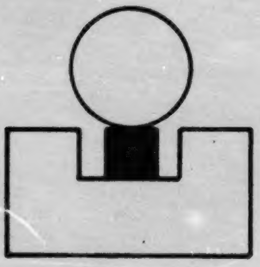
10. The part of a shotgun that controls the pattern of the shot is the ____________________.

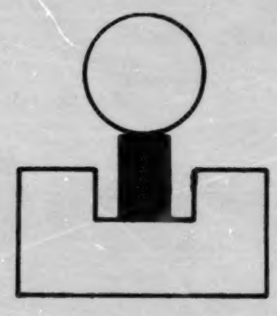
11. Telescopic sights are good for identifying your target. True or false? ______________.

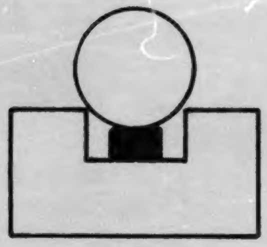
12. When should the "safety" on a firearm be released? ____________________________

____

13. Draw a box around the correct sight picture.







14. Draw a circle around what would be the largest shot size if you were buying ammunition.
9, 2, 12, 7½, 4

15. What is the best way to store firearms and ammunition?

Notes

35

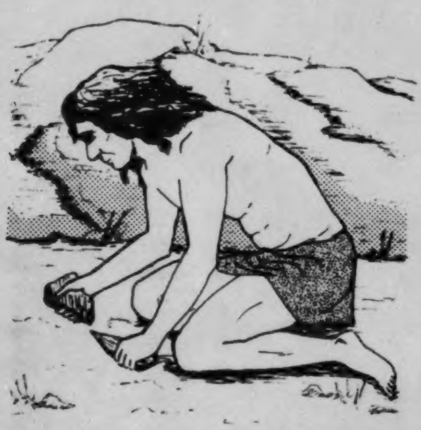
Hunting Tradition and Ethics

Objectives for Chapter 3

When you have completed this chapter, you should be able to do the following:

1. List at least three reasons why firearms were developed.
2. State why Americans hunt today.
3. Explain who owns wildlife in the United States as compared to Europe.
4. Define "ethics" and distinguish "ethical" from "legal."
5. Explain what the term S.P.O.R.T. means.

Early weapons



Early man made his own weapons for hunting.

Prehistoric records tell us that early man learned to shape and produce various tools that he then used to make daily survival easier. Some of these first crudely made tools were used as weapons, which had several functions. One of the primary functions was hunting for food. Animals killed were used as food; the fur and bones were used for clothing, shelter, and tools.

Another function of these early weapons was protection against wild animals and other humans. Thus, early weapons were valuable tools for food, shelter, clothing, protection, and warfare.

The first weapon probably was a club. Then came spears, followed by the bow and arrow. The discovery of gunpowder added a whole new dimension to early man's arsenal of weapons. Gunpowder led into the era of the firearm. We can easily see how important hunting was to primitive people. As the needs of people changed, however, so did the role hunting played in society.

Early American society

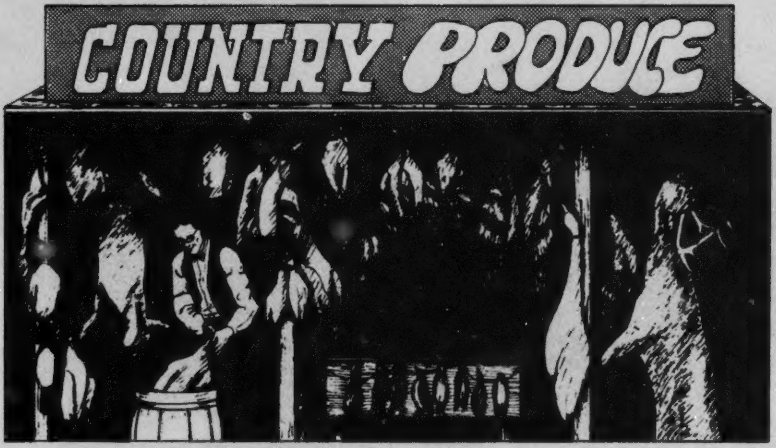
In early American society the reasons for hunting were still primarily for food and clothing. These American hunters developed certain qualities in their hunting. Today we hunters would like to believe that some of those qualities are still important, like sportsmanship, woodsmanship, and marksmanship. We hope such qualities will be instilled in all future generations of hunters.

As early American society changed, again the role of hunting changed. Americans began to specialize and become farmers, ranchers, blacksmiths, carpenters, tailors, and doctors. No longer was there time or need for everyone to hunt. People could now trade materials or services for meat. This was the beginning of a critical era for American wildlife. Young America was feeling growing pains and the expanding population began to shift westward.

Early Americans hunted primarily for food and clothing.

Indians depended upon the buffalo for food, clothing, and shelter.

Market hunting became a way of life for the times. Wild game was needed to help feed the expanding population and there was profit in it for the market hunters. Forests were cut to provide lumber for new homes and businesses and to make more land farmable. Virgin prairies felt the bite of the steel plow as more grain was needed each year.



Market hunters took a heavy toll on wildlife.

The growth of our country took a heavy toll on wildlife. Vast numbers of animals and waterfowl were slaughtered to provide meat. Millions of acres of wildlife habitat were destroyed. The wildlife that Americans thought could never be used up was beginning to dwindle and disappear.

Modern American society

The question has been asked "Why do people hunt today?" They certainly don't have to rely on hunting to provide food and shelter anymore.

Ask a deer hunter—"How much does a pound of venison cost?" He'll probably smile and admit more than prime beef.

So then, why do modern Americans hunt? Anthropologists tell us it's one way to feel a link to the past.

Modern Americans hunt for the recreational enjoyment.

This "link to the past" idea could also be responsible for the popularity of the log home business, gardening, and even such hobbies as quilting. Americans are proud of their heritage and want to insure that future generations can also take pride in that heritage.

Modern hunters also say hunting is a form of recreation that allows them to enjoy their love of the outdoors. While hunting, a hunter is not simply an intruder to the environment. To be successful, the hunter must move with the rhythm of nature and become a part of the environment—a part that plays an important role in modern wildlife management.

The hunter has replaced such predators as mountain lions in the web of life. Animal predators have vacated the areas now occupied by schools, shopping malls, and towns. Like no other time in history, wildlife populations are restricted to dwindling parcels of habitat. For this reason, they must be properly and carefully managed if they are to survive.

The hunter is a tool that wildlife managers can use to help control the wildlife populations on areas still suitable for their existence. It may be a hard truth to swallow, but in our modern society, without proper management, we could see the extinction of many game animals. While man depended on wildlife in the beginning, wildlife is dependent on man today.

Aldo Leopold once defined conservation as "wise use without waste," implying using a resource rather than wasting it. If left alone, wildlife populations would soon use up the food supply available in their habitat. They would die of starvation and disease. This would be wanton waste and certainly not good conservation.

Wildlife managers are practicing conservationists. It is their job to try to keep this catastrophe from occurring. Hunting seasons and bag limits set by the Department of Conservation allow hunters to harvest the surplus.

Since many Americans still enjoy the taste of wild meat, harvested surplus animals are used as a food source. This also is good conservation.

Change in concepts

Meat became a basic item in the American diet very early. The first European settlers brought their eating habits with them. It took a long time for settlers to grow enough domestic meat to fill their needs. Therefore, game animals were used in addition to domestic cattle and hogs.

One European concept, however, did change. In the New World wildlife no longer belonged to the king or to the landowner—it belonged to the *people.* Wildlife was considered a natural resource to be shared by everyone.

This concept has lasted throughout our history. In America, wildlife still belongs to the people and not to the government or the landowner.

Hunters harvest surplus wildlife that might otherwise die of starvation or disease.

In Missouri, wildlife belongs to the people of Missouri. The Department of Conservation, which was established *by* the people in 1936, manages on state lands the fish, forests, and wildlife for the people.

In many European countries today hunting is a sport to be enjoyed only by the wealthy aristocrats who buy the privilege to hunt. Their attitudes and traditions differ from those of American hunters.

In this country, wildlife belongs to the people—not to the government or landowner.

Development of hunter attitudes

Sometimes hunters tend to take wildlife, traditions, and the privilege to hunt for granted. In time, however, they usually begin to understand their role.

Certain phases of hunting based on hunter behavior and attitude can be identified. Let's look at some of these.

Some hunters enjoy testing their skill at shooting.

SHOOTING PHASE

The first phase is called the shooting phase. The hunter judges his success on getting shots. Shooting the firearm is the primary interest. Usually some target practice on a range helps most people move out of this phase.

LIMITING-OUT PHASE

The second phase is called the limiting-out phase. The hunter judges the success of his hunts on whether or not he bags the legal limit of the game he is hunting.

A beautiful fall day spent watching two well-trained dogs find and retrieve quail may not seem successful to hunters in this phase unless they reach their limit.

Usually spending time with more mature hunters will help someone in this phase begin to appreciate other parts of the hunt more than keeping score.

TROPHY PHASE

The third phase is called the trophy phase. The hunter is selective and judges the success of his hunt by the qualities of the animal he bags. A hunter in this phase usually concentrates on big game hunting. In Missouri the white-tail deer and turkey gobbler are the two prime trophy animals.

Hunters in this phase will usually move into the next phase.

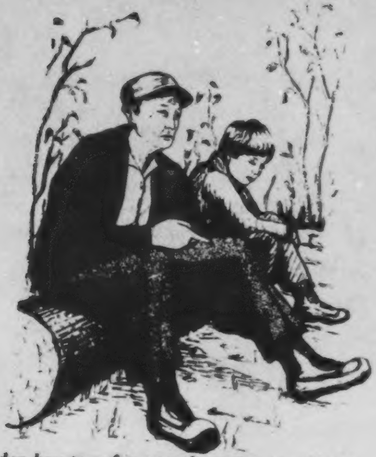
METHOD PHASE

The fourth phase is called the method phase. The hunter judges the success of a hunt by "how" he hunts rather than by "what" or "how many" he harvests.

Primitive weapon hunters, such as bowhunters and muzzle-loaders, are oftentimes in this stage. By using equipment that requires close shots, the hunter lessens his chances of harvest, but better tests his woodsmanship and marksmanship skills.

Hunters in this phase usually overlap the next phase or readily move into it.

Some hunters enjoy the added challenge of hunting with primitive weapons.



Older hunters frequently enjoy teaching younger ones.

PHILOSOPHICAL PHASE

The fifth and last phase is called the philosophical phase. Hunters measure their success by the total hunting experience—the hunt, the companionship of other hunters, and an appreciation of the outdoors. They feel the chance to enjoy a hunt is a successful experience in itself. Anything they harvest will be more symbolic than essential for satisfaction.

Hunters who reach this phase usually remain in it for life. They find pleasure in teaching novice hunters to enjoy and respect their privilege to hunt. As hunters progress to this stage they develop a personal code of ethics. Many hunters want to pass on their code of ethics to other hunters.

Ethics

Let's look at the word "ethics." What does ethics mean? Let's compare legal behavior versus ethical behavior.

Behavior is determined to be legal or illegal based on a set of written laws or statutes. Behavior is determined to be ethical or unethical based on a set of personal values or opinions.

With "legal," it's all black and white. Behavior is either legal or illegal. A person can't be a little bit illegal.

Judgments are gray, rather than black and white, when dealing with ethical behavior. Each of us must make personal judgments about whether certain behavior is right or wrong. If we truly believe that a specific action is morally right, then it is ethical for us to act in such a manner.

On the other hand, another person with a different set of values or opinions may judge our behavior as being unethical. For example, if a hunter truly believes that it is right to shoot a duck while it is sitting on the water, then it is ethical for that particular hunter to do so. His behavior is consistent with his personal code of ethics. If, however, a hunter believes it is wrong to shoot a sitting duck, then it would be wrong for him to do so. Such action would not be ethical for him.

Usually, groups of people in a geographical area will share the same ethical beliefs. Most hunters tend to select hunting partners who share their own ethical standards. When a majority of the people believe a certain ethic or standard of behavior is right for all, and they expect everyone to act according to that belief, then that ethic may become a law.

Personal code of ethics

Your own personal code of ethics is a set of unwritten rules which govern your behavior at all times, both when you are alone and when you are in the company of others. Your personal code of ethics is your standard of conduct, which takes into account your respect for other people and their property, your feelings about living things and their environment, and your own image of yourself. The basis of a personal code of ethics is a "sense of decency." You must ask yourself, "What if someone else behaved the way I do—would I respect him?"

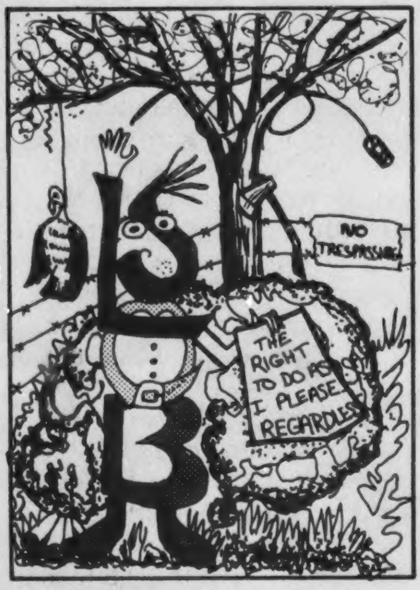
Chances are, you developed a personal code of ethics long before you became a hunter. Because you wanted the respect of your family, friends, and peers, you already developed a certain standard of acceptable behavior. If you have been on hunting trips or listened to hunters talk about hunting, you probably have gained important insights into how you are expected to act while hunting. These, and other experiences, will help you form your own personal code of hunting ethics, will guide your behavior in the future, and can help you earn both self-respect and the respect of your fellow hunters.

What do you consider to be good and bad behavior when you go hunting?

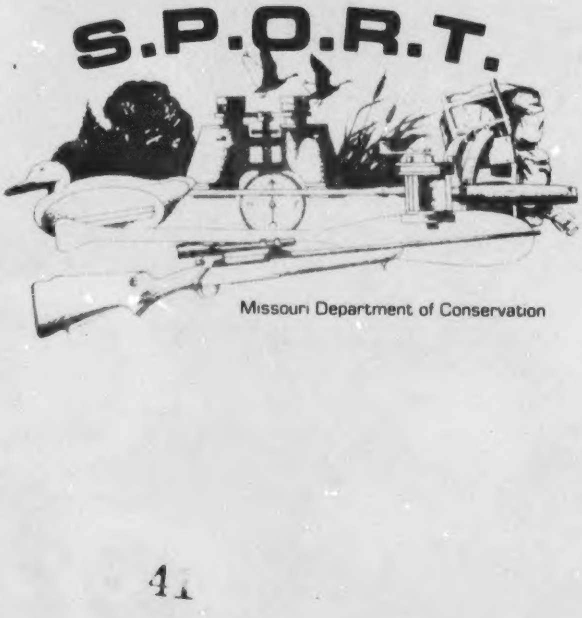
S.P.O.R.T. (SPORTSMEN PROTECTING OUR RESOURCES TOGETHER)

The Department of Conservation's S.P.O.R.T. program is for outdoor users who want to be conscientious and responsible in their various sports. Hunters particularly have been under pressure to clean up their acts. Surveys show that many people do not object to hunting, but they do object to the behavior of hunters who have been rude, careless, dangerous, and inconsiderate. Such actions have resulted in some landowners posting their land.

You can be a member of S.P.O.R.T. by pledging to be responsible, ethical, and safe when you hunt, fish, camp, or in any other way use the outdoors. Wear a S.P.O.R.T. pin on your cap or jacket and tell others you are a good sport with a bumper sticker on your vehicle. You also can take an outdoor ethics class through the Department of Conservation. Most important, however, is that you set a good example when you go hunting.


NO TRESPASSING
THE RIGHT TO DO AS I PLEASE REGARDLESS

Be a S.P.O.R.T. and set a good example.



Glossary

ETHICS	How you behave based on your personal values.
HERITAGE	A link with the past through something handed down from earlier generations.
LEGAL	Behavior is determined to be right or wrong based on a set of written laws.
LITTER	Any unused materials such as paper, bottles, cans, or other trash left scattered about instead of being disposed of properly.
MARKSMANSHIP	The ability when shooting a firearm to hit a target accurately.
MARKET HUNTING	An historical means of making money by harvesting wildlife and selling it to consumers.
WOODSMANSHIP	Outdoor living skills such as tracking, reading signs, and firebuilding, which allow a sportsman to be at home in the woods.

Review of Chapter 3.

1. Firearms were developed for the following reasons:

2. List as many reasons as you can think of why Americans hunt today.

3. In Europe, wildlife is owned by the ________________, but in the United States, wildlife belongs to the ________________________.

4. Ethics is ____

____

____

5. Behavior is judged to be ethical or unethical based on ____________________

6. Behavior is judged to be legal or illegal based on a set of written ________________

7. S.P.O.R.T. stands for

________________ ________________ ________________

________________ ________________. It is a Department of Conservation program for ____________________.

How can you be a member of S.P.O.R.T.?

____

____

____

____

When you hunt you should always set a ____________ ____________ for others.

The Hunter and Conservation

Objectives for Chapter 4

When you have completed this chapter, you should be able to do the following:

1. Define "conservation" and distinguish it from "preservation."
2. Define "carrying capacity."
3. Identify some effects nature has on wildlife populations.
4. List five basic needs of wildlife.
5. Identify two ways that wildlife managers insure healthy wildlife populations.
6. List two means of selectively harvesting surplus wildlife.
7. State how hunters contribute money to wildlife conservation.

What is Conservation?

Conservation is a term we hear a lot about today. We are asked to reduce our speed on the highways, lower our thermostats in the winter, and raise them in the summer. We realize these measures will help reduce our use of energy. So we are working to "conserve" our fuel resources. This is good fuel "conservation." What about wildlife conservation?

Conservation can be defined as planned management of a natural resource to prevent exploitation, destruction, or neglect. In other words, *wise use of a resource without waste.* The word conservation fits very nicely when dealing with wildlife. Wildlife conservation is founded on the principles of planned management and wise use.

Oftentimes people confuse conservation with preservation. Do conservation and preservation mean the same? No!

Preservation can be defined as *no management or use of a natural resource.* You can see that preservation doesn't really fit when dealing with wildlife. Wildlife is a living resource. Living things have a life span and will eventually die to be replaced by others. Such living animals cannot be "preserved" or stockpiled beyond their normal life span.

Wildlife management

Professional wildlife conservationists are people paid to manage our wildlife. These people are usually referred to as wildlife managers or wildlife biologists. Wildlife managers attempt to maintain and manage wildlife populations. Wildlife is one of our valuable resources and in this way, wildlife managers are really resource managers.

A resource can be defined as "any available supply that can be drawn upon when needed." Natural resources are

Wildlife is a renewable resource.

those resources supplied to us by nature. Examples are plants, water, soil, minerals, and wildlife. Some resources, once drawn upon and used, are then no longer available to us. Coal, gas, and oil are examples of natural resources that cannot be replenished or replaced once they have been used. They are called "non-renewable resources." Other kinds of natural resources can replenish themselves through natural means and thus continue to remain available for further use. These resources, such as vegetation and wildlife, are called "renewable resources."

Wildlife management is a science similar to the practice of agriculture or forestry. A forester plants trees, allows them to grow, and eventually harvests them. A rancher must continually remove and sell animals from his herd to keep it within the food supply his pastures have to offer. If he never removed any animals from his herd, the yearly addition of calves would increase the herd size to a point beyond the food supply. Animals would starve as a result. If the rancher never removed any animals from his herd, he would be practicing "preservation." Removing the surplus each year is an example of "conservation."

In a similar way, wildlife managers try to control wildlife populations. Surplus wildlife needs to be removed or harvested to keep it within the food supply available to support it. Wildlife managers "farm" wildlife just as the rancher manages his herds. Wildlife managers use hunting as a tool to crop portions of game populations just as the rancher removes and sells the surplus portion of his herd.

Basic concepts

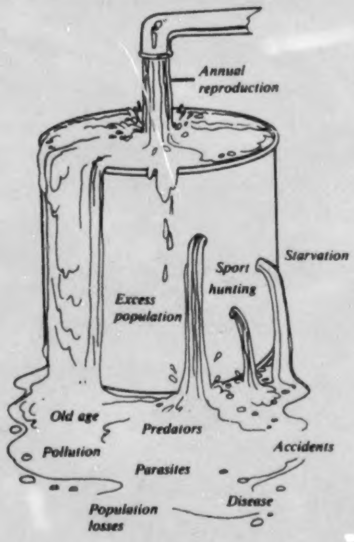
In the world around us, living organisms and the non-living environment function together and interact as an ecological system or "ecosystem." Within an ecosystem, the kind of home or habitat a species of wildlife lives in must provide everything it needs to survive—places for feeding, drinking, resting, breeding, and escaping danger.

Habitat is the total environment that supplies everything the animal needs—food, cover, air, water, and space. When these habitat factors are in good supply, they contribute to the well-being of wildlife. If any part of the habitat is in short supply, it limits the number and distribution of wildlife and is called a limiting factor.

Every habitat has a certain *carrying capacity.* Carrying capacity is the ability of a given habitat to support or carry a number of a particular wildlife species. The carrying capacity of habitat changes from place to place, from season to season, and from year to year. When carrying capacity is at its lowest, usually in the critical winter period, those animals in excess of the carrying capacity will die. Hunting and trapping are tools designed to use the excess animals in a population that would normally die.

Many factors can change a habitat and its carrying capacity. Because of these changes, both short and long term, carrying capacity cannot support a "fixed" number of

Carrying Capacity of Habitat



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animals of a given species continuously. Over time, nature will maintain a wildlife population balance at or near the carrying capacity.

Since the carrying capacity of a habitat is determined by any one of a number of factors, changes in any of these factors may result in either an increase or a decrease of the carrying capacity. These limiting factors are sometimes called "natural controls."

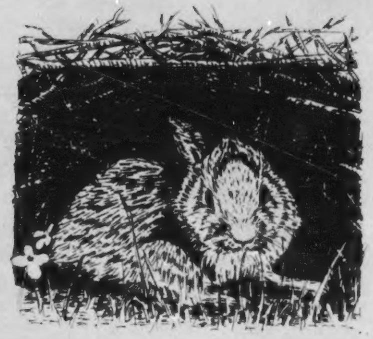
Natural controls

Let's look at some of these limiting factors and see how they affect the habitat's carrying capacity.

Wildlife habitat needs include food, cover, air, water, and space.

FOOD

Each wildlife species eats specific plants or animals or both, regardless of others that may be available. Some foods are more nutritious than others. For this reason, both the quantity and the quality of food may limit the number of wildlife in a given area.



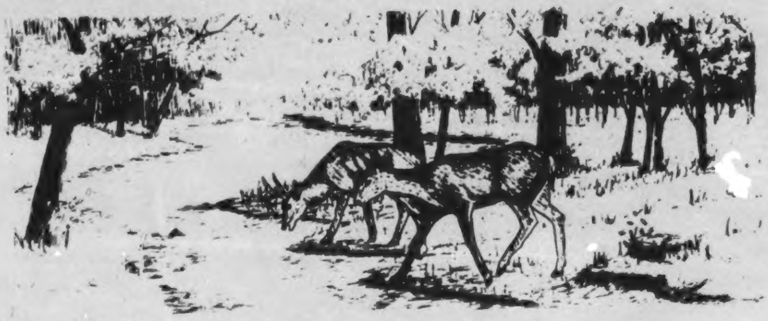
Wildlife needs cover for shelter and protection.

COVER

Wildlife needs cover to shelter and protect it while feeding, sleeping, breeding, roosting, nesting, and traveling, or to escape from predators. Cover can take many forms, such as vegetation, burrows, rocks, or other features. If a particular kind of cover is in short supply, it may also limit wildlife populations.

WATER

All wildlife needs water. Sources of water are lakes, ponds, streams, dew, snow, and juicy plants. Some animals can also use water produced by chemical processes in the body. Water may be needed only for drinking by some wildlife. For beavers and muskrats, however, water is a principle part of their habitat.



Wildlife must have water to survive.

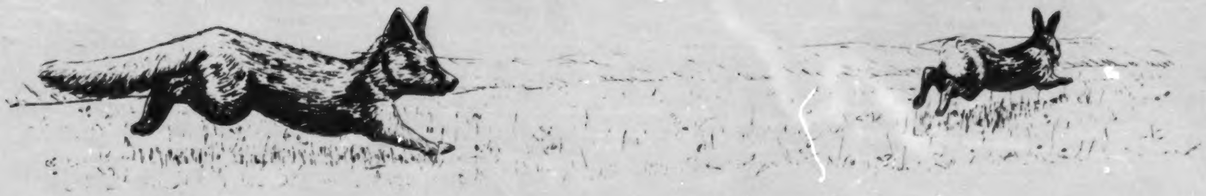
SPACE

Wildlife needs space if it's to survive. Overcrowding leads to severe competition for the essentials of life. For this reason, only a specific number of animals can live in an area, which is what we've referred to as carrying capacity.

In addition, wildlife may have territorial requirements associated with mating and nesting. Many species of wildlife occupy a home range and spend their entire lives within that range. In the case of white-tailed deer, they rarely move beyond the 150 to 200 acres that comprise their home range.

PREDATION

Any animal that eats another animal is a *predator* and the animals they eat are their *prey*. Predators are generally opportunists. Animals that are either very young or very old, or those weakened by disease, parasites, or malnutrition are most likely to first fall prey to predators. When a prey population is low, the predator must find other species to prey upon or its numbers also will be affected. Since most predators are well adapted to pursue and take only a few prey species, their numbers are very much dependent upon the abundance of their specific prey. An example of this would be the mountain lion in Missouri. The mountain lion's principle prey was the white-tailed deer. In the early 1900s, Missouri's white-tailed deer population fell to an all-time low. As a result, the mountain lion in Missouri practically disappeared.



Predators such as the fox hunt prey such as rabbits.

WEATHER

This is undoubtedly a major factor in determining population numbers of wildlife. Weather changes will affect the cover, food, water, space, and other needs of wildlife. A severe winter in Missouri, with lots of ice and snow, can drastically reduce some of our wildlife populations. Animals such as quail would have a difficult time finding shelter and enough food to keep them alive. This is why Missouri's Department of Conservation's food and cover programs were started. One such program is P.A.W.S., which stands for "Planning Ahead for Wildlife Survival." This program provides seed and guidance to landowners who want to plant food for wildlife to help them survive critical winters. Interested persons should contact their local conservation agent.

PAWS
PLANNING AHEAD for
WILDLIFE SURVIVAL

DISEASE AND PARASITES

The effect of disease and parasites on a wildlife population may range from a nuisance to a killer. In extreme cases animals die and their numbers are severely reduced. In other cases animals may not die but their ability to have young is hurt. This affects the population's ability to sustain itself.

BIRTH RATE

Most wildlife species have a high birth rate. The smaller species of wildlife, such as field mice and rabbits, have higher birth rates than the larger species. This works well since the smaller species are usually prey for larger predators. The three most important factors that affect the birth rate are:

1. age at which breeding begins.
2. number of births per year for each breeding female (how many times each year young are born).
3. number of young per litter (how many at a time).

DEATH RATE

The death rate of most wildlife species is high. The smaller species of wildlife have higher death rates than the larger species. Again, the predator/prey relationship affects this. The principle factors affecting the death rate of wildlife in Missouri are:

—availability of food, water, and cover
—predation
—weather
—disease and parasites
—human activities

(Note that these are generally the same factors that limit the carrying capacity of a habitat.)

SEASONAL CHANGES

The number of wildlife can change greatly from season to season. The most obvious change in population numbers occurs in the spring and summer when the young of most species are born. How big an increase there is will depend upon the number of young each female produces.

Not all young will survive, but populations do reach their peak levels in early summer. At this time of year habitat is at its best, offering lush new vegetation for the plant-eating wildlife and large prey populations for the meat-eating predators.

Though many animals will die over the spring, summer, and fall, the winter season is when most deaths occur. In winter, the ability of habitat to support a large number of animals is reduced, often drastically. Those animals in excess of the carrying capacity become surplus and may be lost to starvation and other factors. This annual mortality is part of the natural cycle. All that is required in nature is that a sufficient number of breeding animals will survive until spring and the cycle starts over.

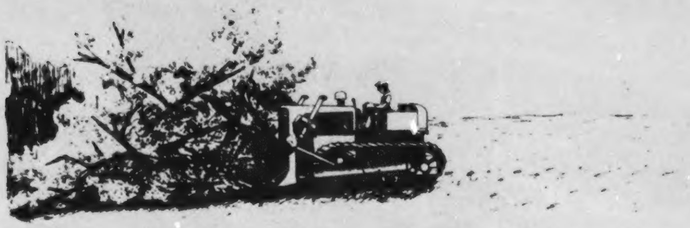
Artificial controls

Using surplus wildlife is good conservation.

Surplus wildlife cannot be preserved or stockpiled for future use. A surplus is either used or lost. Using the surplus wisely is good conservation. Losing or wasting a surplus is *not* good conservation.

The average life span of most wildlife species is less than three years. All forms of wildlife are living creatures that will inevitably die. This loss is replaced by the birth of new animals.

The ability to control and manipulate both the rate of decline and the factors that influence the rate of production of a wildlife population forms the basis for wildlife management. Today's wildlife managers manage wildlife habitat to insure adequate populations of wildlife. Wildlife habitat in Missouri is constantly undergoing change.



As bulldozers clear land for development, wildlife habitat is destroyed.

Shopping malls replace forests; bulldozers turn fields into golf courses; and more and more land is being cleared for agriculture. The Missouri Department of Conservation buys and manages parcels of land for the benefit of wildlife. Although primarily done to benefit game species, the creation of new habitat will also benefit many other kinds of nongame wildlife. The Department of Conservation is also working with cooperative landowners, assisting them in the management of their lands for the benefit of wildlife.

Through management of habitat, wildlife managers help insure optimum populations of wildlife. This, as in nature's rule, develops a surplus of animals each year. If the wildlife managers were to ignore this surplus, they would be wasting a resource. Again, this would not be good conservation. To not waste the surplus of wildlife, wildlife managers, in their management plans, allow for selective harvesting of the surplus.

Conservation agents help landowners manage their land to benefit wildlife.

Selective harvest of surplus wildlife comes in the form of hunting and trapping. Wildlife managers control the selective harvest process by the use of game laws.

Development of game laws

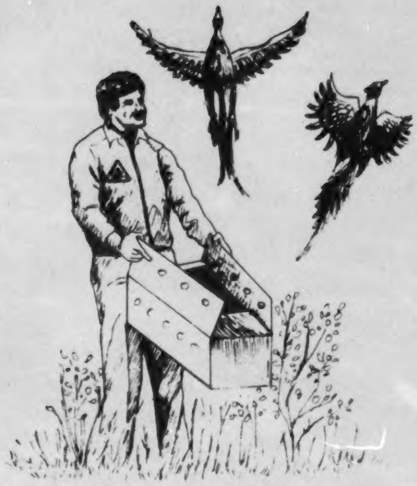
When settlers in our country learned to produce enough domestic meat for their needs, it was no longer necessary to shoot and trap food. The thrill of stalking and hunting game became a "sport," which is still with us today.

With the growth of sport hunting, sportsmen saw a need for wildlife conservation. They formed clubs and organizations, such as the Izaak Walton League, Ducks Unlimited, state conservation federations, and the Boone and Crockett Club.

One of the founding members of the Boone and Crockett Club was Theodore Roosevelt. As President of the United States in the early 1900s, Roosevelt began a national program for the conservation of natural resources. In addition to his many conservation projects, he sponsored the first White House governors' conference in 1908 to help publicize the conservation movement.

Groups such as those mentioned started major conservation programs. Members of many of these organizations were important in establishing state departments of conservation and in developing laws for hunting seasons and bag limits.

Many of these groups started programs of restocking private and public lands. Some programs to release game animals have been very successful. This can be seen by the success of the ring-necked pheasant, a bird originally brought from China in the 1800s. A more recent example is the current populations of deer and wild turkey found in Missouri. Both were so small in number by the 1930s that they were nearly extinct in our state. By trapping and moving wild animals to suitable habitat around the state, new breeding populations were established. The result is quite obvious today with our large populations of both deer and wild turkey.



Some animals, such as the ring-necked pheasant, have been successfully released in new locations.

Some of these early sportsmen's groups spent much time developing and taking care of natural habitats. They tried to keep the animals healthy in their natural range so they could live and breed in the future. Sportsmen have helped to make conservation an active issue today. Their support in *time, energy,* and *money* was and is of great importance.

Support by hunters to set aside wilderness areas and refuges has helped keep wildlife alive and thriving. Through the Endangered Species Act, which sportsmen have supported, rare species such as the whooping crane have been saved. Today, efforts of sportsmen continue with the help of state and federal programs. Nonhunters and hunters alike now have a better chance to enjoy the outdoors.

Who pays for conservation?

Many people wonder where the money comes from to pay for the state conservation departments and programs. Who does pay for this? Sportsmen who are hunters and fishermen actually pay for their own sport. In fact, they pay for more. Over the last 50 years, they have provided more than $5 billion for conservation. State departments of conservation depend on money from the sale of licenses and taxes on firearms and ammunition. More than $300 million is now collected each year. This money must be used by the states for wildlife restoration.

One of the major laws in conservation is the Pittman-Robertson Federal Aid in Wildlife Restoration Act, which was passed in the U.S. Congress in 1937. It states that tax money on sporting arms and ammunition will be spent on wildlife restoration. This fund is one of the better programs set up for the support of wildlife. About $30-50 million a year is collected from this tax. The money is given back to the states in amounts determined by land area and the number of licensed hunters in the state.

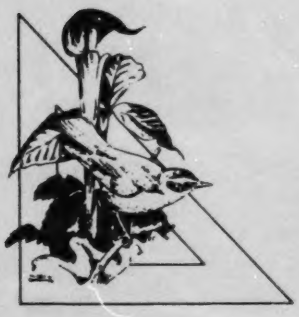
There are other requirements of the Pittman-Robertson Act. In order to receive money from the tax, states must employ trained wildlife personnel. Money from the tax is used to help fund research projects dealing with wildlife.

State land can be bought with money from the Pittman-Robertson Tax. The tax money on guns and ammunition, archery equipment, and license sales helps to provide hunters and nonhunters with state-owned recreation areas. Recent additions to the Pittman-Robertson Tax put more of the sportsman's tax money into this fund. Now states use this money for hunter safety and conservation education programs.

Thus, it was hunters who pushed for the first game laws and it was hunters who have paid for the wildlife conservation programs we have had in this country and in Missouri. Money from the Pittman-Robertson Tax and the sale of permits has financed the Missouri Department of Conservation from its beginning in 1937.

But what about today? Is the Missouri Department of Conservation still funded the same way? The answer is yes, but with an addition.

In 1976, the people of Missouri voted for a new sales tax. This new sales tax is 1/8 of 1 percent, or 1¢ on every $8, and all the proceeds go to the Department of Conservation to help fund its many conservation programs. The conservation sales tax has opened new doors for the conservation-minded citizens of Missouri, since it more than doubled the operating budget of the Missouri Department of Conservation.

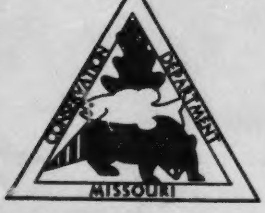


This logo is used on all projects funded by the Design for Conservation sales tax money.

The Design for Conservation Sales Tax has allowed the Department of Conservation to buy new parcels of land around the state. It also has enabled the Department to increase its education programs and to start a Natural History Section to manage the state's nongame species.

Who were the people who worked for and supported this new tax? It was hunters, fishermen, trappers, and the many other wildlife supporters we call "sportsmen." Who profits from this work? Everyone who uses the outdoors.

The Missouri Department of Conservation



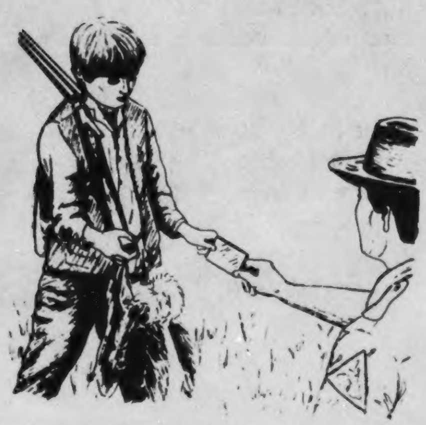
The Department of Conservation logo has symbols representing forestry, fisheries, and wildlife.

In Missouri, interested sportsmen circulated petitions in 1936 to put before voters a constitutional amendment to form a conservation department. Amendment #4 was passed November 3, 1936, and went into effect July 1, 1937. This amendment created the Missouri Conservation Commission, which was given constitutional authority for "the control, management, restoration, conservation, and regulation of the bird, fish, game, forestry, and all wildlife resources of the state."

Department functions

One important function of the Department of Conservation is managing almost 700,000 acres of state-owned and other public land for optimum populations of fish and wildlife. The Department also manages many of these acres for healthy productive forests.

On private land, the Department of Conservation assists landowners who wish to manage all or part of their land for wildlife. Sales tax money has made possible such programs as P.A.W.S. (Planning Ahead for Wildlife Survival) to help interested landowners. The Department also employs biologists who conduct ongoing research on various wildlife species. This research is used to help manage wildlife and is the basis on which game laws are written.



Conservation agents enforce game laws. Fine money collected from violators goes to county school funds.

Enforcement of game laws is another important function of the Department of Conservation. One of many roles of conservation agents is to actively seek game law violators. Violators are prosecuted, which usually ends in a fine. The fine monies collected go into the school fund of the county in which the violation occurred. The Department of Conservation receives no revenue from fine monies collected.

Game laws written and enforced by the Missouri Department of Conservation fall into three main categories.

The first category is ***Conservation or Protection of Resources and Environment.*** Fish, forests, and wildlife are natural resources and laws in this category help to insure they are properly managed and used wisely. An example of a game law in this category is the Endangered Species Act, which prohibits the harvest of any rare or endangered wildlife. Laws that dictate the legal seasons for harvest of wildlife are another example. Also under this category, plants and animals and areas recognized for their uniqueness and variety are protected from fire, litter, pollution, and damage by motorized vehicles.

The second category is ***Equal Harvest Opportunity.*** Under the equal harvest opportunity comes fixed bag or possession limits. Bag limits spread the opportunity to catch fish or harvest game among many people.

The third category is ***Protection of People.*** Enforcement of some laws has an effect on the safety and welfare of people. Speeding limits and littering laws are enforced on Department of Conservation lands for this reason. Conservation agents on occasion enforce some statutes written by other agencies, such as boating regulations.

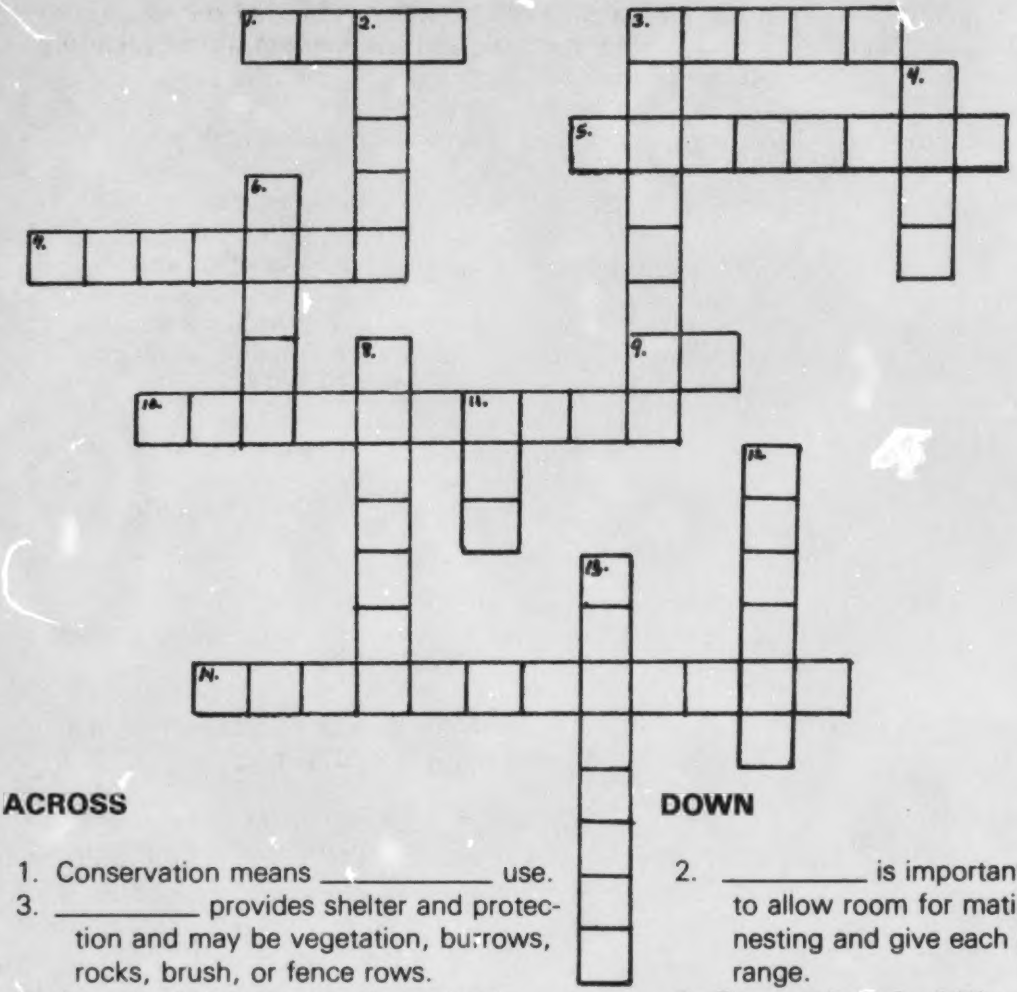
All regulations are written based on biological principles and much research. Safety also is considered in some regulations. When sportsmen understand the need for regulations, hopefully they will comply more readily. Most conservation agencies have means by which people may air complaints and offer suggestions. In Missouri, the monthly Conservation Commission meetings are held in different parts of the state and are open to the public.

Glossary

BAG LIMIT	The number of a specific species that can be harvested by one person per day. This limit is set by the Conservation Department to help insure a strong and stable population of all wildlife. It also provides hunters an equal harvest opportunity.
BIRTH RATE	The number of individual young or litters born to wildlife in a year determined by the age at which breeding begins, how many times each year young are born, and how many are born at a time.
CARRYING CAPACITY	The number of a specific species of wildlife that can survive in a given area.
CONSERVATION	The wise use of our natural resources.
CONSERVATION COMMISSION	A four-person body appointed by the governor and serving six-year terms with the responsibility for making rules and regulations pertaining to the control, management, restoration, conservation, and regulation of the bird, fish, game, forestry and all wildlife resources of the state, including lands and certain facilities owned and used for such purposes.
COVER	The place where wildlife can hide from predators, find protection from the weather, raise their young, and in some cases, find food and water. A place similar to your house.
DEATH RATE	The proportion of the number of deaths per year to the total population *or* some other stated number.
GAME	Animals so designated by law or regulation that are pursued or taken while hunting for sport or food.
GAME LAW	Written controls dealing with the pursuit or harvest of specific animals generally hunted for sport or food.
HABITAT	The total environment that supplies everything an animal needs—food, cover, air, water, and space.
HARVEST	The quantity of a natural product gathered in one season.
LIMITING FACTOR	The natural controls on the wildlife population such as food, cover, water, space, predation, weather, disease and parasites, the birth rate, the death rate, and seasonal changes.
NATURAL RESOURCE	That resource which is produced by nature.

NON-RENEWABLE RESOURCE	A resource that cannot be replaced, such as oil or coal.
PITTMAN-ROBERTSON ACT	A law passed by the U.S. Congress in 1937 stating that tax money on sporting arms and ammunition will be spent on wildlife restoration.
PREDATOR	An animal that catches and eats other animals.
PRESERVATION	No management or use of a natural resource.
PREY	An animal that is caught and eaten by another animal.
RENEWABLE RESOURCE	Natural resources that can replenish themselves through natural means and thus continue to remain available for further use, such as vegetation and wildlife.
RESOURCE	Any available supply that can be drawn upon when needed.
SELECTIVE HARVEST	Controlled hunting and trapping of surplus wildlife by the use of game laws.
SPACE	The amount of room needed by an animal to survive, sometimes associated with territorial requirements needed for mating or nesting.
WILDLIFE	Living things that are neither human nor domesticated—mammals, birds, and fishes hunted by man.
WILDLIFE CODE BOOK	Game laws written and enforced by the Missouri Department of Conservation and published for the citizens' information and use.
WILDLIFE MANAGEMENT	The science of maintaining and managing wildlife populations.
WILDLIFE MANAGER	Professional conservationists paid to manage our wildlife and resources.

Review of Chapter 4



ACROSS

1. Conservation means __________ use.
3. __________ provides shelter and protection and may be vegetation, burrows, rocks, brush, or fence rows.
5. An animal that eats another animal is a __________________.
7. Nature also takes its toll on wildlife populations through parasites and ____________.
9. Preservation means __________ use.
10. Wildlife managers insure healthy wildlife populations through habitat management and selective ____________.
14. In 1936 the people of Missouri formed a __________ Commission to help benefit the wildlife of the state.

DOWN

2. __________ is important to wildlife to allow room for mating and/or nesting and give each animal a home range.
3. The number of wildlife a habitat can support is its __________ capacity.
4. Without __________ to eat, wildlife will perish.
6. All wildlife need __________ to survive. Some animals, like beavers and muskrats, also require it for their homes.
8. Hunters contribute monetarily to wildlife conservation by buying __________.
11. In 1976 a Conservation Sales __________ was approved to further benefit wildlife management in the state.
12. Fine monies from wildlife code violations go to county __________ funds.
13. Hunting and __________ are two means of selectively harvesting surplus wildlife.

Safe Firearms Handling

Objectives for Chapter 5

When you have completed this chapter, you should be able to do the following:

1. State the most important safety rule for handling firearms.
2. Describe the safest way to transport firearms and ammunition in a vehicle, boat, or on other machinery.
3. Identify the six proper ways to carry a firearm in the field and describe what determines which carry you should use.
4. Define "zone of fire" and explain why it is important.
5. Identify several situations when a hunter should unload his firearm in the field.
6. Locate the "brain" of a firearm.
7. Describe how to properly clean and care for firearms.

To be a safe hunter, you must know and accept on a full-time basis your responsibilities concerning the rules of safe gun handling. One basic rule in firearms safety is: ***Always point the muzzle in a safe direction.*** This is a simple rule and easy to follow *if you think*. Most firearms accidents, however, are caused by someone not obeying this rule.

Rule #1: Always point the muzzle in a safe direction.

Safety rules are good only if they are *remembered* and *used* on a full-time basis. For example, what does the phrase, "Always point the muzzle in a safe direction" mean? A safe direction means away from people. It also means, however, that you should not place a firearm where it can accidentally be knocked over and possibly pointed at someone. Do not rest firearms on trees, fences, the side of a vehicle, or in bushes. You also should not lay it down where someone might walk in front of it. And you should never use a firearm as a cane or crutch.

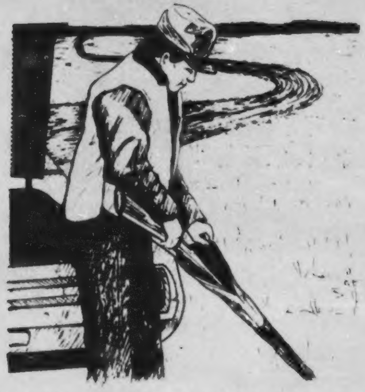
If you are handed a firearm, first point it in a safe direction, then check to see if it's loaded. This is only one rule, however. As a safe hunter, it is your responsibility to not only *know* all the rules, but to *use* them.

Primary rules of safe gun handling

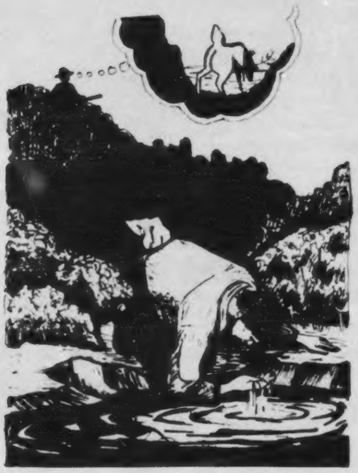
There are 10 rules that are often referred to as the 10 Commandments of Safe Gun Handling. You should know and use each one.

1. **Always keep the muzzle pointed in a safe direction.**

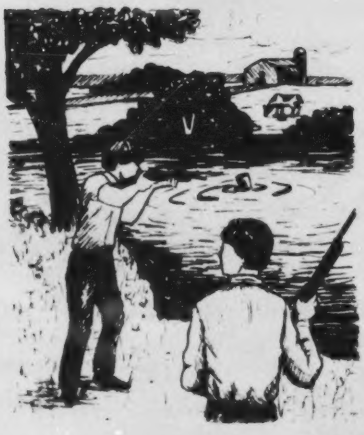
A "safe direction" means in a direction that should the firearm discharge, it will not cause injury or damage. This also applies should a hunter fall. Think ahead. Know where your muzzle will point should you trip or fall. Never pull a firearm muzzle first from a case or vehicle. Never lose



Keep the muzzle pointed in a safe direction when removing a gun from its case.



Be absolutely sure of your target before you shoot.



Do not shoot at water.

muzzle control. Watch those around you. Do not let them point their muzzle in an unsafe directon.

2. **Treat every firearm as if it were loaded.**

This is a good basic rule of thumb to avoid the accidents that may happen because of mechanical or human error. By always following this rule, firearms users are prepared for anything.

3. **Always keep the action open except when actually hunting or preparing to shoot.**

An open action makes it impossible for a firearm to go off accidentally. Open the action when the firearm is not in use.

4. **Be sure the barrel and action are clear of obstructions and that you have the proper ammunition for the firearm you are carrying.**

Snow, dirt, faulty reload wads, or any obstructions in a barrel can cause the gun to bulge or blow up. Always check the barrel for obstructions before you start your hunt or if you have fallen.

Improper ammunition also can blow up a firearm. Carry only the ammunition made for the gun you are using.

5. **Be sure of your target before you pull the trigger.**

Vision and hearing are the two most important senses to a hunter. You may hear a game animal, but you *must* see and identify it positively *before* you pull the trigger. Never use a scope on a rifle to identify a target. To do so would mean pointing the muzzle at an unidentified target, and that would be unsafe. Positively identify your target before you ever point your firearm at it. Also know what's beyond your target. Shooting an animal standing on the horizon of a hill is dangerous because you have no way of knowing what's over the hill. Know the maximum range of your ammunition so you can make safe decisions. Once a bullet has been fired, it can *never* be taken back.

6. **Never point a firearm at anything you do not want to shoot. Avoid all horseplay with a firearm.**

Horseplay and firearms don't mix. The results can be deadly. Firearms and hunting are deadly serious business and should always be treated in a serious manner.

7. **Never climb a fence, tree, or jump a ditch with a loaded firearm.**

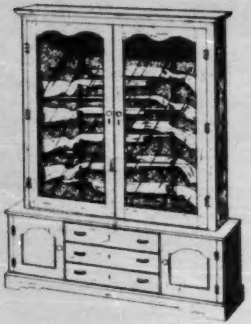
When you encounter an obstacle in the field that may cause you to lose muzzle control, unload the firearm. It doesn't take but a few seconds to unload and reload and those few seconds may mean a lifetime, perhaps yours!

8. **Never shoot at a flat, hard surface or water.**

Bullets will ricochet off flat surfaces such as rocks, metal, or water and are impossible to control. Remember—that bullet is your responsibility from the time it leaves the gun until it comes to rest.

9. **Store firearms and ammunition separately.**

This will help insure the safety of your equipment. Always store firearms unloaded. That way, anyone gaining



Store firearms and ammunition separately.

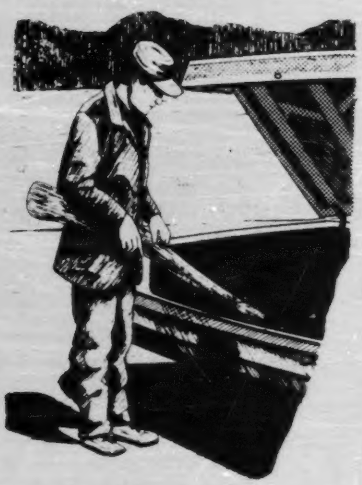
access to them will be less able to mishandle them. If the ammunition is locked up separately, the firearm should still be safe. Owning a firearm carries with it the responsibility of safe storage.

10. **Avoid alcohol and other drugs before or during hunting.**

Alcohol and drugs can affect your judgment and dull your senses. This can create a very dangerous hunting environment.

Remember that these 10 commandments are just rules and rules are good only if people *know* and *use* them. *People* cause firearms accidents, firearms don't. The only brain a firearm has is the brain of the person using it.

Transportation of firearms and ammunition



Transport firearms unloaded and in a case.

Many times a firearm must be transported—from the store to home, to the range for sighting-in and practice, and to and from the field. In each case, you need to exercise safe gun handling.

Firearms are transported in cars, trucks, boats, farm vehicles, on horses, and by other methods. Whatever method you use, carry your firearms unloaded and in a protective case. They should be placed in a safe, secure position, preferably in a trunk, to prevent them from falling. Place firearms so that no one can accidentally get in front of the muzzle. For your own protection, handle the firearm by the stock. This will prevent the muzzle from being pointed at you. This is especially true when putting a firearm into or taking it out of a vehicle or case.

Some states have a "cased gun law," which makes it illegal to transport firearms except in a case. Missouri does not have such a law, but even though it's not illegal to transport an uncased firearm, it is certainly *not* safe. Cases keep guns cleaner and protect them from being handled or bumped around.

Gun racks over the seats of pickups have become quite popular and fashionable. If you use one, keep your guns unloaded and cased. Theft is sometimes a problem with over-the-seat gun racks. Guns kept in them are easier for children to reach. Also, firearms may fly forward in a collision and could possibly cause serious head or neck injuries. A case will give some padding to protect both you and the gun.

Carrying firearms in the field

If you are going to be a safe hunter, you must apply the rules for safe firearms handling when you go into the field. There are several ways to carry your gun safely and still have it ready for quick use. In all carries, the following rules apply:

...Muzzle under control, pointed away from yourself and others.

...Safety "*on.*"

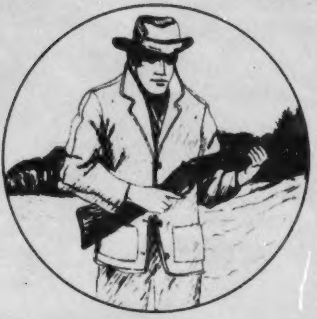
...Fingers *outside* the trigger guard.

The carries that are used most often, by rifle and shotgun hunters are illustrated.

Carries

TWO-HANDED READY CARRY

This is the best all-around carry because it gives the best control of the gun and muzzle. It is the safest and allows you to raise your gun quickly for a shot. It can be used in most situations safely.



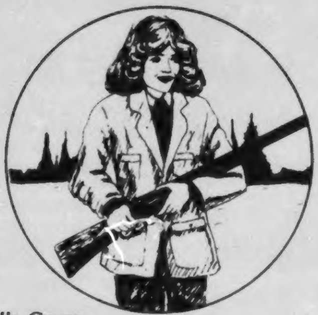
Two-Handed Ready Carry

CRADLE CARRY

This carry also is good, although it does have one drawback. The muzzle is pointed to the side, so it should *not* be used when someone is walking beside you on your muzzle side.

TRAIL CARRY

This carry is safe to use when several people are walking abreast. It also can be used when you are the leader in a single-file formation. Do *not* use it when you are following others and do *not* use it in brushy areas or in deep snow. It would be easy for a stick or snow to get inside your barrel and obstruct it.



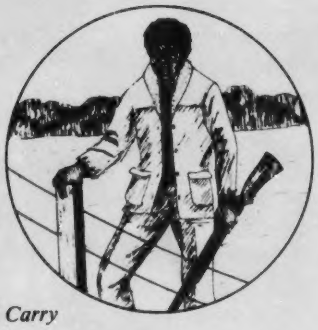
Cradle Carry

SIDE CARRY

This carry is safe when walking in open terrain. In brushy areas, however, it is easy for brush to catch the barrel and push it downward. This carry should *not* be used when hunters are ahead of you.

SHOULDER CARRY

Many hunters carry their guns this way when walking beside people or behind them. Since the muzzle is out of sight, special care must be taken to keep it pointed upward. This carry should *not* be used when others are behind you. It would be easy for a person to walk in front of the muzzle accidentally.

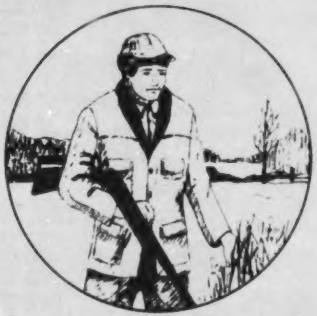


Trail Carry

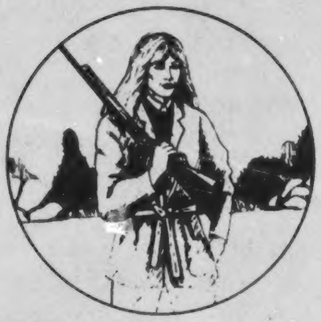
SLING CARRY

Many rifle hunters use this carry when walking a long distance before taking a shot. It leaves both hands free when the hunter is standing. When walking, one hand should have a good grasp on the sling to keep the muzzle pointed up. Do *not* use this carry in thick brush because the gun could be knocked from your shoulder.

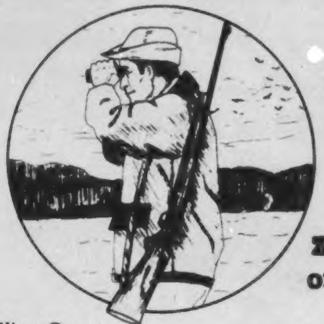
You must choose a carry that will keep the muzzle *pointed safely*. The carry you use will depend upon where other hunters are walking and the terrain. Hunters often position themselves in a line beside one another. Those on each end should use either the cradle or the side carry. The center hunter should use only the side or two-handed ready carry. When going from one hunting area to another, or



Side Carry



Shoulder Carry



Sling Carry

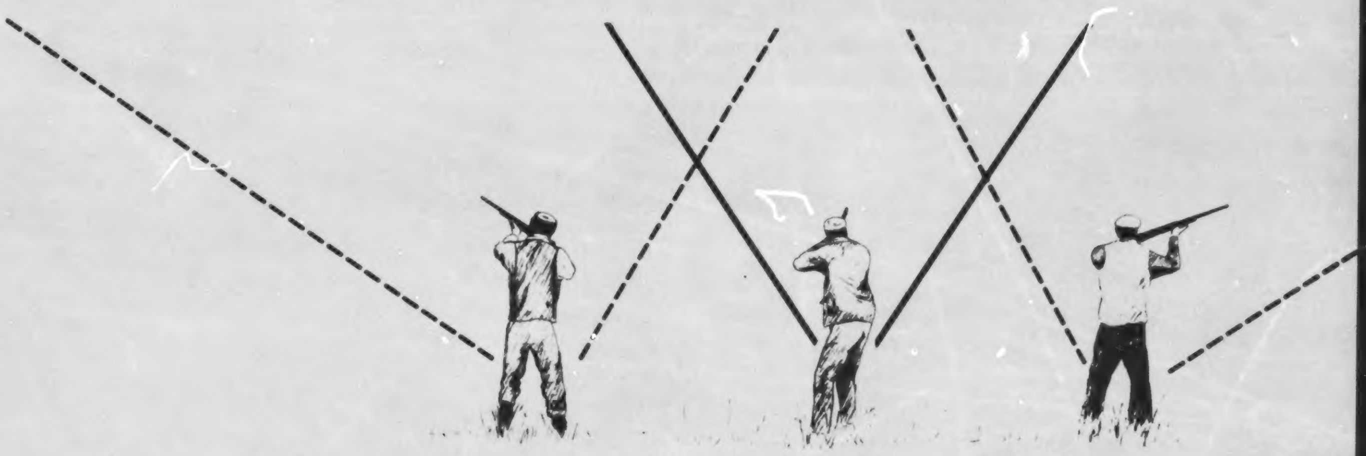
following game trails, hunters often travel in single file. The leader may use any carry except the shoulder carry. The last person in line may use the two-handed ready, side, sling, or shoulder carry. The center hunter may use the two-handed ready or side carry.

A handgun hunter should carry his firearm secured in some type of holster. By doing so, the hunter protects the firearm from weather and rough use. To secure the handgun better, choose a holster with a top flap or strap on it. This can prevent the handgun from falling out of the holster and also encourages its user to draw the firearm slowly and safely.

No matter what carries you choose to use when hunting, never forget about fatigue. A firearm can get heavy after a long day afield. As you become tired, you may get careless. Never allow this to happen. If you feel yourself getting tired, stop, unload your firearm, and rest.

Zones of fire

When hunting with a group of people, *zones of fire* must be established. Hunters need to know where they can shoot without endangering others in the party.



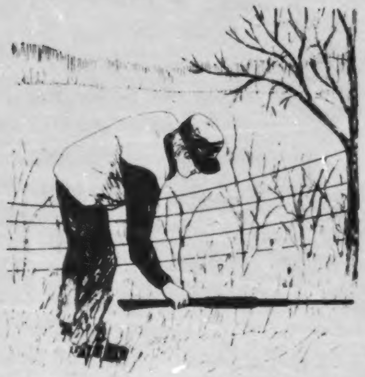
Imagine three quail hunters walking abreast while hunting in an open field. The center hunter takes all "going away" birds in the center of the field. The two outside hunters take the birds "flying to their side." Should a bird fly towards and overhead of the group, it's best to hold fire. The same is true for a rabbit running back between two hunters. When hunters swing out of their zones, many times they point their guns at one of their friends. Take enough time to make a good, safe shot. If you are unsure or you must move too quickly, it is better to pass up a shot.

The zones of fire also apply to waterfowl hunters in a duck blind or boat. In this type of shooting the birds usually fly in a single direction. Hunters must know exactly how far they can swing before they cross into a companion's zone.

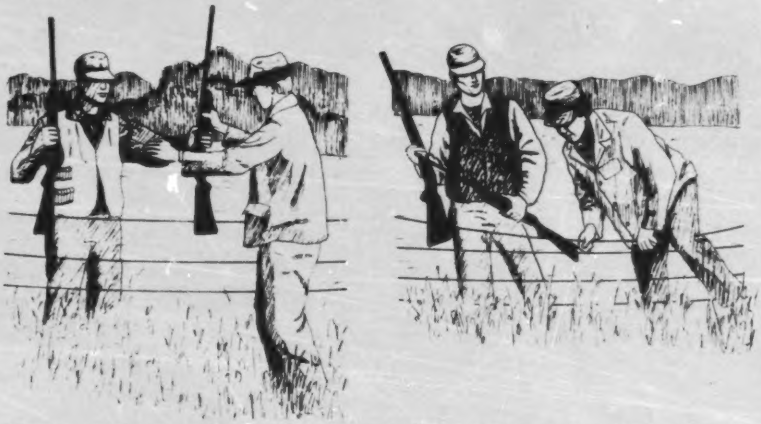
When hunting big game such as deer, party members are many times separated, often out of sight of each other. Every member should know the direction and planned location of each hunter in the party. You are less likely to mistake a man for a deer when you know that other hunters are near. ***Remember—positive target identification is a must!***

Hazards of the field

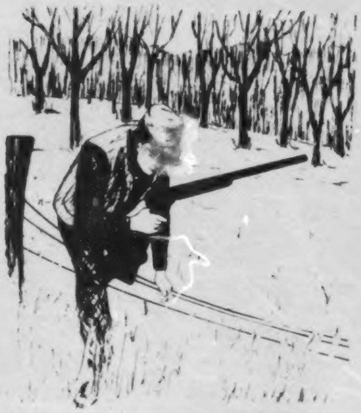
While hunting, you will need to safely overcome many obstacles. Weather conditions may make footing difficult. Downed timber and ditches will test your skill in safe gun handling. If you come to a steep bank or slippery area, unload your gun. If you fall, you must still maintain muzzle control. Afterwards, check the firearm for damage, dirt, and barrel obstructions by unloading your firearm, opening the action, and visually inspecting it.



If hunting alone, unload your firearm and place it on the other side of the fence before crossing.



If hunting with a partner, hand your gun to him before crossing the fence.



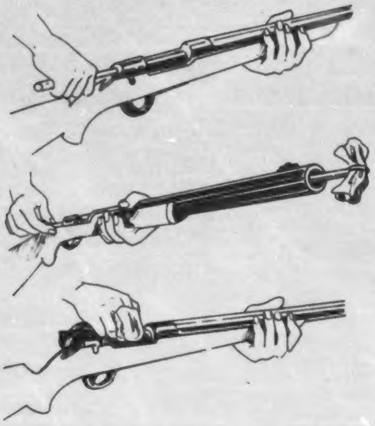
If the ground is muddy or wet, unload your gun, open the action, and cross the fence while carefully maintaining muzzle control.

If crossing a fence alone, unload your firearm and place it over the fence. The muzzle should be pointed away from where you are crossing. Your hands will be free to cross the fence safely. If you are crossing a fence in snow or mud, you may not wish to lay your firearm down. In this case, unload the firearm, open the action, and hand it to a hunting partner or carry it across with you, always maintaining muzzle control.

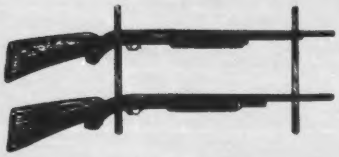
The basic safe firearms handling rules we've discussed are only common sense. No rules ever prevented an accident, however. Only safe hunters who obey the rules prevent accidents. If you are hunting with someone who refuses to follow these rules, you should tell him you will not hunt with him unless he does follow the proper rules of safe gun handling. You may save his life and your own.

Care and maintenance of firearms

Regular cleaning and proper storage will keep your gun in good working order and allow it to provide you with a lifetime of shooting pleasure. Any firearm that has been stored uncovered for a long period of time or has been exposed to moisture and dirt must be cleaned thoroughly before using it.



Keep your firearms clean.



It is best to store guns in a horizontal position.

To clean a firearm you will need:

1. cleaning rod
2. patches
3. powder solvent
4. light gun oil

Before cleaning any firearm, check to be sure it is unloaded. Do not have ammunition nearby. Whenever possible, clean the bore through the breech end.

First clean the barrel and metal parts with a good commercial powder solvent until the patch comes out clean. Then run an oily patch through the bore. Apply a *light* coat of light oil to all metal parts. Too much oil can clog the gun and prevent the action from working smoothly.

Whenever possible, you should store a shoulder gun in a horizontal position. When stored vertically, muzzle up, the oil will run down into the stock, which will weaken it. If you have to store a shoulder gun for a long period of time and cannot store it horizontally, it is best to store it with the muzzle down. Before using a firearm that has been in storage, run a clean patch through its bore. Remove all excess grease and oil.

Ammunition also should be kept clean. If sand or dirt collects in the bullet lubricant, it can damage the bore of the gun.

Firearms are precision instruments. Guns which are not operating properly should be examined by a gunsmith or returned to the manufacturer. Even minor repairs should be made by an expert. Many valuable firearms have been ruined and made unsafe or inoperable by people trying to save money by doing it themselves. Remember—an unsafe firearm could cost you your eye, hand, or life. Isn't your life worth the price of a professional gunsmith?

Glossary

CLEANING PATCH	A piece of cloth or other material used on the end of a cleaning rod for the purpose of cleaning the inside of a firearm barrel.
CLEANING ROD	An instrument long enough to pass through the barrel of a firearm, it is used with a patch or brush to clean the inside of the barrel.
GUNSMITH	A person whose occupation is designing, making, and repairing firearms.
ZONE OF FIRE	Area in which a hunter can safely shoot.

Review of Chapter 5

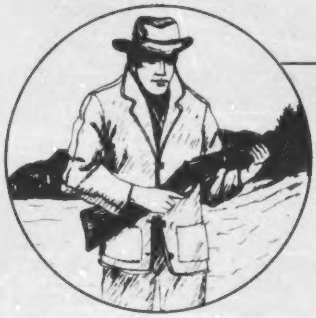
1. When handed a firearm, you should first

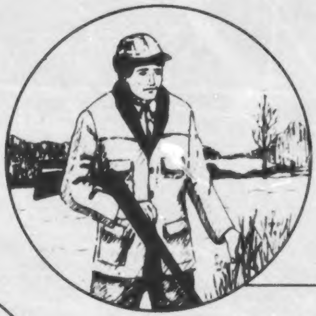
______________________________.

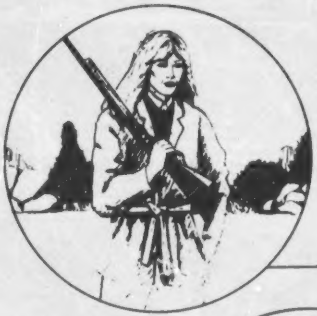
2. The safest way to transport firearms and ammunition in a vehicle or boat is ____________

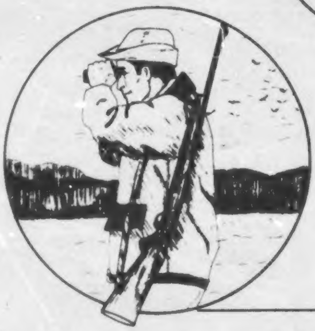
and ____________________.

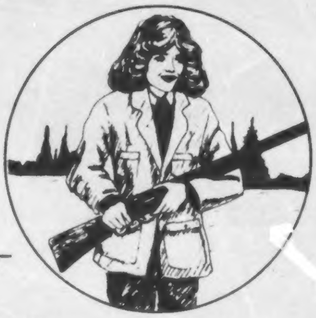
3. Label the six field carries.

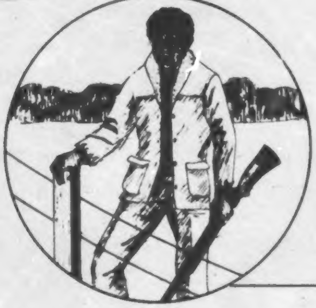












4. What determines how you carry a gun when hunting?
   - a. Which direction you want to point the muzzle
   - b. Location of your partners
   - c. Type of terrain you are walking in
   - d. All of the above

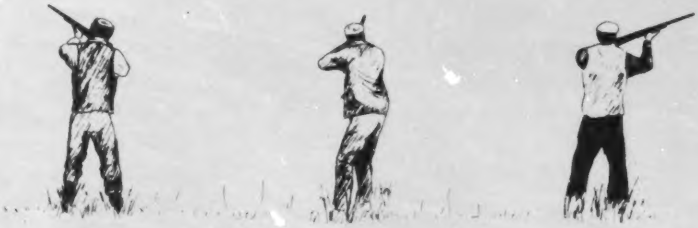
5. What gun carry would be best for a single hunter to use when walking through brush?

____

Why? ______________________________

____

6. Mark the zones of fire for these hunters.



7. Zone of fire is ______________________________

____

____

Why is a zone of fire important? ______________________________

____

8. Place a check by those situations when you would unload your firearm in the field.
- ☐ Crossing a fence
- ☐ Getting into or riding in a vehicle
- ☐ Walking through an open gate
- ☐ Climbing a steep hill
- ☐ Crossing a stream
- ☐ Taking a coffee break

9. The "brain" of a firearm is ______________________________

____

10. What is the first thing you should do when cleaning a firearm?

11. Describe how to properly clean a firearm.

Notes

Hunter Responsibilities

Objectives for Chapter 6

When you have completed this chapter, you should be able to do the following:

1. Identify several ways hunters can help protect the environment.
2. List three examples of unacceptable hunter behavior.
3. List at least three ways to help improve hunter/landowner relations.
4. Describe the importance of proper game identification.
5. State why it's important for a hunter to be a good marksman.

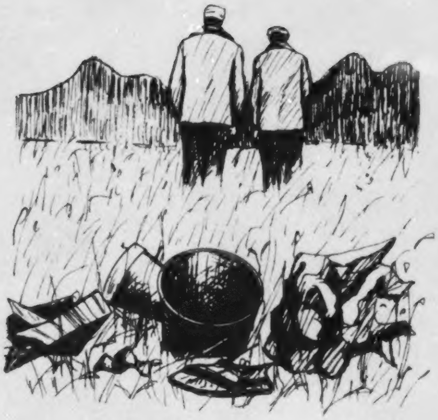
What is the most important thing hunters can do to help insure the future of hunting in our country? The answer is simple. We must realize and remember that hunting is a privilege. As hunters, we are responsible for keeping this privilege. The way we conduct ourselves in the field while hunting is the way our sport is evaluated by the nonhunting public. Hunting, like any other sport, has rules. Some of these rules are laws and some are ethical guidelines. These rules must be followed if the sport of hunting is going to be lawful and ethical. Our first responsibility as a hunter is to learn and obey these rules.

Environmental protection

We all have a responsibility to our country and to our state. Protection and wise use of our environment are important. You, as a good hunter, have many responsibilities that will go hand in hand with this protection and wise use of natural resources.

It becomes your duty as a hunter to leave the land as you found it, or in better condition if possible. If you spot litter while hunting, pick it up. If all hunters did this there would be less litter in our fields and forests. This also means, of course, that as a good hunter you do not contribute to the litter problem.

One of the strongest powers hunters possess in helping keep our state beautiful and our resources plentiful is their right to vote. After all, hunters were among the first to fight for laws to protect our environment and its resources. It's your responsibility as a hunter to study pending laws that affect the environment and its resources so you can cast a wise vote. Even if you're not old enough to vote, you can still help campaign for any laws that will be good for conservation. As a hunter you must not assume a passive role when it comes to protecting our environment and resources; you should actively stand up and be counted.

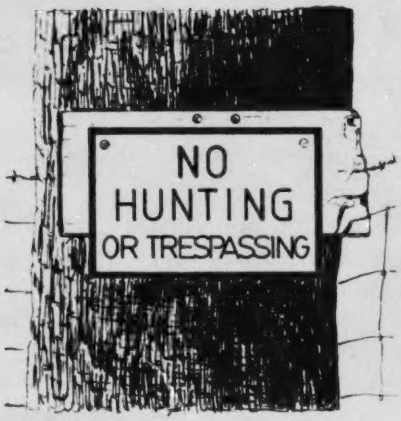


Pick up litter. Leave the area better than you found it.

66

Another important role the hunter can play is to take part in wildlife research whenever possible. If an animal you harvest is wearing a tag or band, take the time to mail it in. If you're asked to fill out a survey, fill it out. This information can provide valuable information to biologists who are conducting research to help our wildlife resources.

Hunter/Landowner relations



More than 85 percent of the land in the state of Missouri is privately owned. This means that most Missouri hunters will have to do at least part of their hunting on private land. Just imagine how crowded the 10-day firearms deer season would be if over 300,000 deer hunters were confined to only 10-15 percent of the state's fields and forests. The result might be losing the privilege to hunt. This is what makes hunter/landowner relations so important to all of us. Maintaining good landowner relations is a responsibility that all hunters must accept.

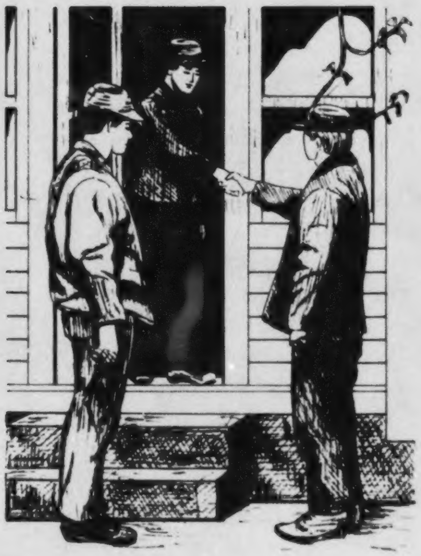
The responsible hunter realizes he is a *guest* of the landowner when hunting on private land. He makes sure he is welcome by asking the landowner for permisson *before* he hunts. On the rare occasions when permission is denied, he accepts the situation gracefully. He does not want to trespass.

Missouri's criminal code changed on January 1, 1979. Trespass laws in Missouri are now divided as to the degree of severity.

Trespass in the first degree requires evidence that one entered the property knowingly, or that the property was completely fenced with locked gates, or frequently posted with clear, legible, and very visible signs. It also requires that the defendant be positively identified. Trespass in the first degree is a misdemeanor and carries a fine up to $500 and/or a term in jail not to exceed six months.

Trespass in the second degree is a simple law aimed at persons who do not bother to determine whose property they are on or get permission to go on it. Trespass in the second degree does not require the land to be posted, fenced, or have the other warning requirements of trespass in the first degree. Trespass in the second degree is an infraction, not a misdemeanor, and is punishable by a maximum fine of $200.

As you can see, when you ask permission to hunt on private land, you are doing yourself a favor as well as the landowner.



Obtain permission from the landowner before you hunt.

Be courteous when asking permission. To avoid disturbing the landowner early in the morning, a responsible hunter plans ahead and obtains permission before the season opens. He understands that the landowner usually doesn't mind if he brings a friend or two along, but he will destroy his welcome if he arrives with a whole carload of companions.

While hunting, the responsible hunter takes extra care to avoid disturbing livestock. If he is hunting with a dog, special precautions are taken to insure it doesn't harass cattle, chickens, or other farm animals. Dogs and loud noise can cause dairy cows to not produce milk, chickens to crowd together and perhaps suffocate, and beef cattle to run which can result in weight loss. Any of these could cost a landowner money and prompt him to remove the welcome mat.

The responsible hunter leaves all gates as he finds them. He crosses all fences so as to avoid loosening the wires and posts. He only hunts where the owner has granted him permission to be and he learns the boundary lines so as not to trespass on other private land. He never assumes he is welcome on private property simply because other hunters have already been granted permission to hunt there. If he hunts as a guest of someone else, he does not go back and hunt on his own without first obtaining permission.

A responsible hunter is careful to avoid littering the land with empty shell boxes, shotgun hulls, sandwich wrappers, pop cans, or other garbage. He never drives or walks through standing crops nor does he send his dog through them when crop damage may occur. Any driving is restricted to roads and trails. He realizes that ruts left by vehicles can cause soil erosion. When parking his vehicle, he is careful not to block the landowner's access to buildings, equipment, or roadways. If he notices anything wrong on the property, such as open gates, broken fences, or injured livestock, he reports it to the landowner as soon as possible.

A responsible hunter does not wear out his welcome by hunting day after day on the same property and taking limit after limit of game. He may hunt on the same land several times a season but he spaces out his hunts and is careful not to deplete the game on the land. He always takes the time to thank the landowner or a member of his family for the privilege of hunting on the land. He also offers to share his game with the landowner after successful hunts.

A responsible hunter realizes the landowner is doing him a favor by allowing him to hunt on his land, so he offers to return the favor. He may offer to help the landowner with some chores or occasionally leave a gift the landowner can use such as work gloves, a box of ammunition, or maybe some fish he caught that summer. A Christmas or holiday card to the landowner and his family is a nice expression of appreciation each year.

A landowner has no respect for someone who trespasses.

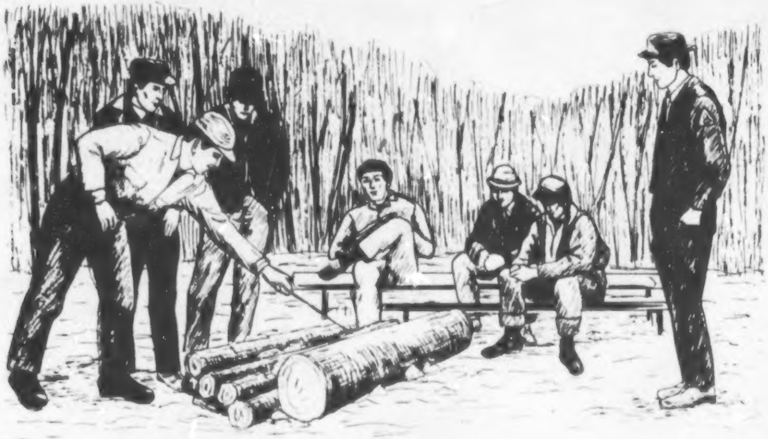
Probably the most important point to remember in hunter/landowner relations is that a landowner has no respect for those who trespass. For the time it takes to ask, why not feel welcome and know you may come back again. Common courtesy goes a long way in human relations.

Game laws

A responsible hunter knows and obeys all laws which govern his hunting activities. Although he may occasionally not understand or disagree with a specific law, he will not deliberately disobey it. A responsible hunter who doesn't understand a game law will ask his local conservation agent to explain it to him. If he strongly disagrees with a law, he will make his feelings known by attending a Conservation Commission meeting or by writing a letter to the Director of the Missouri Department of Conservation.

Some people feel that certain birds of prey, such as hawks, eagles, and owls, are detrimental to game populations. Research shows, however, that these animals feed primarily on rodent pests and are extremely beneficial. Their values are now recognized to the extent that they are protected by some of the strictest state and federal laws. Many are listed as rare or endangered in Missouri. Shooting these birds and any others that are not legal game is punishable by fines and/or imprisonment.

A responsible hunter will never ignore illegal acts he observes when afield. He rightfully insists that all members of his hunting party obey the law. He reports any illegal activities he may see to the local conservation agent or county sheriff's office as soon as possible. If asked to serve as a witness, he accepts his responsibility as a citizen and sportsman to do so. When he meets a conservation agent checking hunters in the field, he is cooperative and provides any information requested concerning his hunting activities. If he does not understand the reason for providing certain information, he asks for an explanation.



Cooperate with your conservation agent by providing any information requested.

Courtesy and sportsmanship

A responsible hunter is considerate of his companions. When leaving for a hunt, he is ready to go at the appointed time and does not invite others to join the group unexpectedly.

Once in the field, his consideration extends to other hunters as well. He realizes that true satisfaction in hunting does not depend on competing with others for game, but rather sharing opportunities with them.

A responsible hunter avoids doing anything that will interfere with another hunter's hunt or his enjoyment of it.

He does not shoot along fence lines adjacent to fields where others are hunting nor does he try to intercept the game they are hunting.

A responsible hunter does not hog an unfair number of shots—he does just the opposite. He gives friends the advantage of getting a good shot whenever possible. He shows special consideration for the inexperienced hunters by allowing them to hunt from the most advantageous position. He takes opportunities to introduce new hunters to the enjoyment of hunting and he is quick to share his knowledge with them.

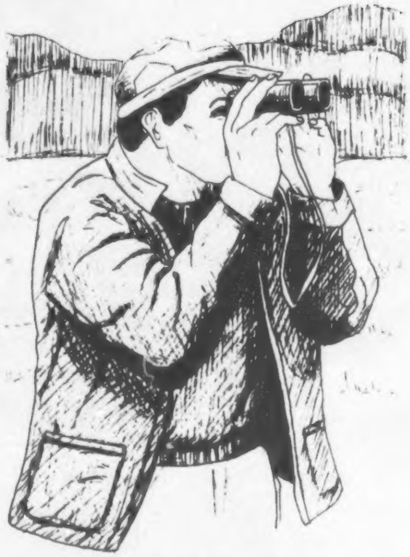
A responsible hunter does not shoot over his limit to fill the bag limit of his companions nor does he take his own limit unless he plans to use all he has taken. He observes the rules of safe gun handling at all times and firmly insists that his companions do the same.

Game identification

The responsible hunter will learn to identify the game he is going to hunt. This is extremely important to the hunter for legal, ethical, and recreational reasons.

Missouri game laws require a hunter to accurately identify his quarry. Sometimes the hunter is also required to recognize the sexual and age characteristics. Examples of this are a male deer with at least one 3-inch antler, a male turkey or one with a visible beard, a male pheasant, and the waterfowl point system. Many animals are "protected" and must not be hunted. Most game animals are only legal during a predetermined season.

Thus, learning to identify game correctly is important to the hunter and should be mastered *before* the hunt begins. While there are several ways to master game identification, game study and actual field practice are the best.



Know how to identify game.

First, learn what game animals are legal to hunt in your area. Next, learn all you can about these different animals. Books, charts, magazines, films, and pamphlets will give you the basic information you need for identification. Many of these can be borrowed or purchased and some are free for the asking. They will give a wide range of information about animal size, shape, color, and habits. In many publications, special hunting tips and advice can be obtained. Also, a number of individuals in your community may be able to help you. Talk to conservation agents or other Department of Conservation employees, hunter education instructors, sporting goods store owners, biology teachers, or local experienced hunters. All of these resources can help you to prepare for the hunt. By taking this first step, the ability to accurately identify game animals becomes much easier.

After you have done some basic game study, actual field practice is next. The hunting area should be explored or scouted *before* your hunt. This will help you to learn the habits of game animals and their surroundings. This will also give you a chance to locate game and determine what areas

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are holding the most animals. The effect of light, time of day, and weather change how things will look. Eating, watering, and movement habits of game can be learned. You can observe seasonal changes in vegetation and agricultural crops that may alter game habits. You will learn not only how to identify game, but also where to find it.

Field practice and pre-season scouting are important to a hunter. One important point to remember is to *always* ask permission of the landowner *before* you start your scouting. This will give you a chance to meet the landowner before the season opens and a chance to ask permission to hunt on his land.

Ask permission to scout an area if it's private land.

All the information you can gather on the game you are seeking will help you to be a more successful, safe, responsible hunter. You will be more successful because you will know where to hunt and will have improved your hunting skills. You will be safe because you will be able to positively identify your target before taking a shot. You will be more responsible because you will have taken the time to properly prepare yourself before you hunt. When the hunting day comes, the time spent learning to identify game will have been well worth the effort.

Respect for wildlife

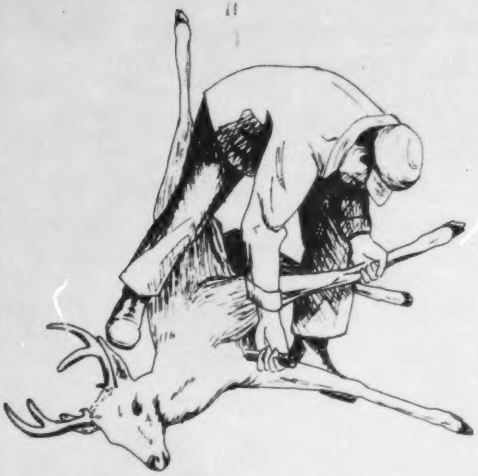
A responsible hunter is not just a sportsman, he is also a naturalist. His interest in wildlife extends beyond game animals to the variety of other living things that inhabit the outdoor world. He enjoys the sight of a bald eagle as well as a wild turkey gobbler. He knows and studies nature's ways and realizes that wildlife can be enjoyed year round, not only during the hunting season.

When hunting, the responsible hunter carries with him the traditions of the past, and his pursuit of game is always governed by the principle of "fair chase." He will always attempt to get close enough to his quarry to insure a quick, clean kill. He realizes that in doing so, his quarry may discover him and escape before he has a chance for a shot. He accepts this, however, as part of the hunt and as a much better alternative to taking a poor shot and possibly wounding the animal.

Never, under any circumstances, will a responsible hunter shoot indiscriminately at a flock of game birds or a herd of big game in the hope of hitting one. He will always identify and attempt to kill his quarry quickly and humanely.

Through considerable practice before a hunt, he will learn the distance at which he can be most confident of killing game cleanly. He will make sure his rifle is accurately sighted in and that his choice of ammunition is sufficient to kill the animal cleanly and quickly. If he is using a shotgun, he will have patterned it using the shot size most effective for the game he is seeking. In other words, the responsible hunter will learn and remember the limits of his firearm and the limits of his skill in shooting it. Once learned, he will never push these limits by shooting at game out of these limits.

A responsible hunter will also learn the anatomy of the game he hunts so he will know where to place a bullet for a clean, quick kill. Once afield, he will look long and hard to find wounded game, even if it means interrupting his hunting to help another hunter locate a wounded animal. When possible, he will use a trained dog to retrieve wounded game birds. If it appears he has missed a shot, a responsible hunter will always carefully inspect the spot where his quarry was to make sure the animal was not hit.



Know how to field dress and care for your game.

A responsible hunter should show as much respect for his game after it is taken as before he shoots it. He does not waste the meat. The antlers or hide of an animal or feathers of birds can be given to anyone who might use them for such things as beautiful handicrafts.

A responsible hunter will learn how to properly dress and care for the meat of any game he wants to harvest *before* he starts the hunt. He can learn from pamphlets, books, seminars, films, and other materials available. Another good way to learn is to accompany an experienced hunter and learn from him how to properly field dress and care for the meat.

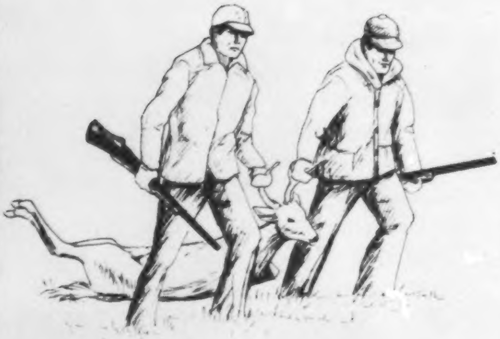
Remember, to waste the meat or usable parts of an animal is not good conservation. The definition of conservation is ''wise use without waste.''

Self-respect

A responsible hunter realizes it is his responsiblity to take care of himself in the outdoors. He realizes his physical limits and respects his limitations.

He never places his life or that of others in jeopardy by failing to let someone know where he plans to hunt and how long he expects to be gone. If his plans change once afield, he calls home or leaves a note on his vehicle telling his destination, time of departure, and expected time of return.

Once afield, he always knows the where-abouts of the rest of his hunting party and makes sure they know his. He always wears proper clothing, such as hunter orange during deer season, for his own personal safety. He learns the best way of transporting his game from field to vehicle. A deer draped across his shoulders or a turkey slung over his back is not responsible behavior since another hunter might mistake him for game. A deer should be dragged out, not carried, by a hunter in bright orange clothing. A strip of hunter orange cloth wrapped around a turkey before leaving the woods will make carrying it safer.



By dragging out your game, you are less apt to be mistaken for another animal.

A responsible hunter will respect the limitations of his health and physical fitness. If unfit, he builds up his fitness *before* he goes hunting. He makes sure his vision is adequate and, if necessary, wears glasses or contact lenses to correct any visual impairments.

To cope with unexpected outdoor emergencies, a

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responsible hunter learns and practices the basic skills of first aid and survival. He learns how to best outfit himself and his equipment to cope with the ever-changing weather. In other words, the responsible hunter is always prepared.

If we as hunters could use just one word to describe ourselves and the way we would like other people to view us, that word would probably be **RESPONSIBLE.**

Make sure you are physically fit and your vision is good.

Glossary

ENVIRONMENT	The circumstances, objects, or conditions surrounding us.
FAIR CHASE	Pursuing wildlife in a manner that is both legal and ethical. For example, road hunting would not be considered fair chase.
FIELD DRESS	The process of gutting an animal while in the field.
RESPONSIBILITY	Being responsible, reliable, trustworthy, accountable for one's actions.
SPORTSMANSHIP	Conducting yourself in a manner that is fair, generous, and a credit to your sport.
TRESPASS	To enter unlawfully upon the land of another.

Review of Chapter 6

1. How can hunters protect the environment?
   a. Leave the land as they find it when they go hunting.
   b. Pick up litter.
   c. Be careful and safe with firearms.
   d. Support good conservation policies.
   e. All of the above.

2. List three examples of unacceptable hunter behavior.

   ____

   ____

   ____

3. List three or more things you can do to help improve hunter/landowner relations.

   ____

   ____

   ____

   ____

4. Before shooting at wildlife in the field, a hunter must determine what?
   a. Is it really an animal?
   b. Is it legal?
   c. Is it in range?
   d. Is there a suitable backstop?
   e. All of the above.

5. Marksmanship is important to insure a ________________ and ________________ kill.

Hunter Preparedness

Objectives for Chapter 7

When you have completed this chapter, you should be able to do the following:

1. Describe the importance of patterning your shotgun.
2. List shot sizes and choke patterns for hunting specific wildlife.
3. Describe the importance of sighting in a rifle or handgun and explain how to adjust your sight.
4. Define "trajectory."
5. Identify the best clothing for a hunter.
6. Identify the most visible color of clothing a hunter should wear.

It's important for a hunter always to be prepared. In this chapter we will look at some of the ways a responsible hunter can prepare himself and his equipment.

Shotgun patterning

Many hunters don't realize how important it is to pattern a shotgun. Hunters who may spend considerable time sighting in a deer rifle will simply grab their shotgun and shells and head out without a thought of patterning their shotgun.

Chapter Two dealt with the various chokes found in shotgun barrels and how they function to control the pattern, or how the shot disperses once it leaves the barrel. A shotgun pattern, however, is much more involved than simply the choke. Gunsmiths have experimented with patterns for more than a century. Variables such as size of shot, powder charge, condition of bore, and type of wad will affect the pattern. For this reason, no two shotgun barrels will pattern exactly the same. Even how the shotgun fits the shooter will affect the pattern in relation to the bead on the end of the barrel.

A shotgun pattern may have holes in it that can cause a miss or wound game. By patterning a shotgun, the hunter can determine his correct hold and leads so he can take most advantage of his pattern. For example, in turkey hunting the vital or kill zone is the head and neck of the turkey. For a clean, quick kill a shotgun should be held so the denser part of the pattern will encompass the head and neck. One shotgun might pattern low or high, so it's important for the hunter to realize this.

The first thing in patterning a shotgun is to determine what ammunition you will use. This will depend upon the quarry you plan to hunt. You should always match your shot size and powder charge to your quarry. This will help insure a clean, quick kill with a minimal amount of meat

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damage. If you have questions on matching shotgun shells to quarry, refer to the chart on this page. Once shot size and powder charge have been determined, you must select what brand of shells to use since different brands of shells will pattern differently.

Quarry	Suggested Chokes	Shot Size
Geese	Full	BB or 2 for most shooting 4 over decoys
Turkey	Full	BB, 2, 4, or 5 for most conditions 5, 6, or 7½ at close range
Pheasant	Full or Modified	4 or 5 in cornfields or long range
	Modified or Improved Cylinder	6 or 7½ over dogs or in close cover
Ducks	Full Modified	4 or 5 for pass shooting 5 or 6 over decoys
Grouse	Improved Cylinder or Modified	7½ or 8 for small birds
Rabbit	Improved Cylinder or Modified (for brush)	6 for cottontails
	Full (for open areas)	4, 5, and 6 for jack and snowshoe rabbits
Squirrel	Modified	5 or 6
Woodcock, rail, or snipe	Modified (in open cover) Improved Cylinder (in heavy cover)	8
Doves, Pigeons	Modified	7½, 8, or 9 for mourning doves or whitewing 6, 7½ or 8 for long range
Quail	Improved Cylinder Modified	8 or 9 for light feathers 7½ or 8 for heavy feathers or wild flushing birds

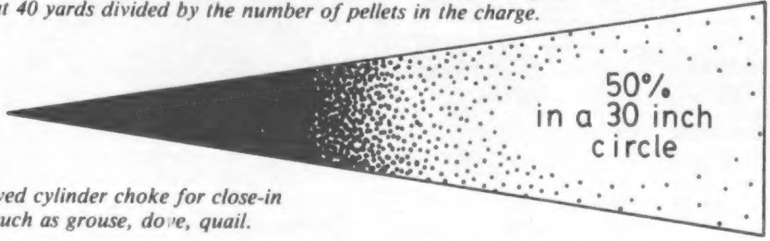
Now that the ammunition is selected, you will need a large piece of paper or cardboard at least 4 ft. by 4 ft. Fasten the paper to a safe backstop and back up 40 yards. Point the shotgun at the center of the paper and pull the trigger.

Draw a 30-inch circle on the paper so it will encompass all the shot holes possible. Then count the holes inside the circle and calculate what percent of the total shot was in the circle. Refer to the chart on the next page to determine how many shots were in your shell. The other chart will indicate what percent of the shot your gun should put inside the circle.

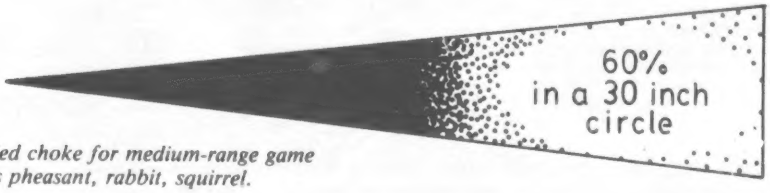
SHOT	**Number**	**Diameter in Inches**	**Approximate Pellets in 1 Oz.**
●	12	.05	2385
●	9	.08	585
●	8	.09	410
●	7½	.09½	350
●	6	.11	225
●	5	.12	170
●	4	.13	135
●	2	.15	90
●	BB	.18	50
BUCKSHOT			
●	4	.24	340
●	3	.25	300
●	1	.30	175
●	0	.32	145
●	00	.33	130

Percent of Pellets Expected at 40 yards.

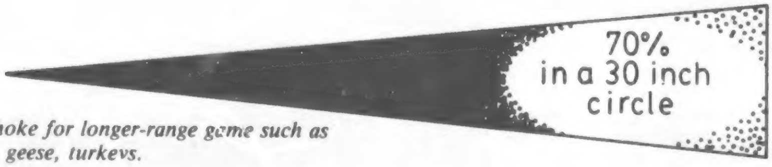
The pattern percentage of a shotgun is the number of pellets it puts in a 30-inch circle at 40 yards divided by the number of pellets in the charge.



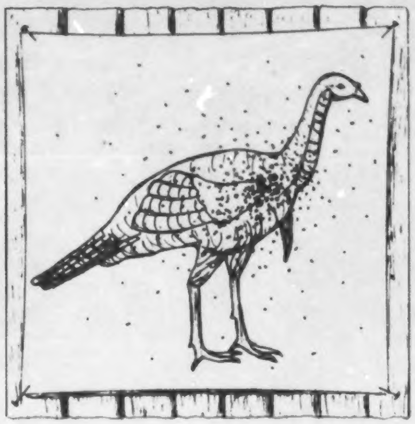
Improved cylinder choke for close-in game such as grouse, dove, quail.



Modified choke for medium-range game such as pheasant, rabbit, squirrel.



Full choke for longer-range game such as ducks, geese, turkeys.



Pattern your shotgun using a life-size game silhouette.

By studying your pattern on the paper, you should be able to determine if it has any large areas void of shot or if it tends to be high, low, left, or right. If your pattern is off, it can easily be corrected by a qualified gunsmith. You also can experiment with different ammuntion when patterning and determine what shot shells pattern best in your shotgun.

Another good way to test your pattern is to set up a large piece of cardboard with a life-size game silhouette drawn on it. Back up the distance you think you'll shoot at this game, take aim at the vital area, and fire. You can then determine if your hold or aim on the game's vital area takes full advantage of your pattern. You may have to try several different brands and shot sizes before you find the load that patterns best for your shotgun.

Patterning a shotgun is not difficult and the results can more than pay for themselves. This is just one more way a responsible hunter determines his limits and the limits of his firearm.

Sighting in a firearm

In the last chapter you learned how important marksmanship is to the responsible hunter, both for safety and in respect for game. Marksmanship is a skill. One way to become a good marksman is to have a qualified person teach you the fundamentals of accurate shooting. Once you've learned those fundamentals, you should practice to perfect them. Make sure you learn the correct fundamentals, however. If you are making a fundamental error, practice will only serve to make you better at doing something wrong.

One important marksmanship fundamental is sighting in your firearm. The way you sight in your firearm will depend somewhat on the type of sights on your gun. Most hunting firearms use open sights or telescopic sights.

OPEN SIGHTS

The first step in sighting in a rifle or pistol is the same as patterning a shotgun. Select the ammunition best suited for the game you are seeking. Bullet design and weight, powder charge, and manufacturer can affect the accuracy of your firearm. Choosing the right caliber is important also. Small game such as rabbits and squirrels require only a .22 rimfire caliber bullet for clean, quick kills. Using a caliber larger than this can wastefully destroy meat and be dangerous. On the other hand, a .22 rimfire caliber bullet certainly wouldn't insure a clean, quick kill of a white-tail deer. In fact, it is illegal in Missouri to hunt deer with a bullet weighing less than 60 grains.

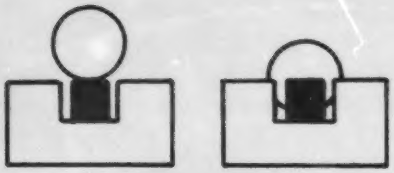
Once you have selected your ammunition, you are ready to sight in your firearm. It's important to sight in your firearm with the same ammunition you will use when hunting.

Move the rear sight in the direction you want the bullets to move.

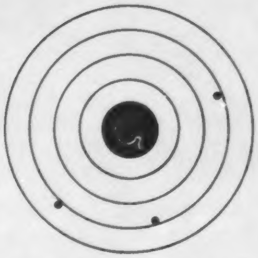
A .22 caliber rifle usually is sighted in at a distance of 50 feet. A high-powered deer rifle is usually sighted in at 25 yards, then the target moved back to the distance you expect to encounter your game and the sights adjusted accordingly. You start at 25 yards to make sure you will be on target at least. Be sure to hold the rifle as steady as possible, using a bench rest or sandbags for support.

Next, using all the marksmanship fundamentals and the sight picture illustrated in drawing #1, fire three shots. If your three-shot group looks like drawing #2, you need to concentrate on your fundamentals. You cannot adjust your sights if you have a shot group like this. Relax and fire three more rounds. When you get a shot group like drawing #3, you are ready to adjust your sights.

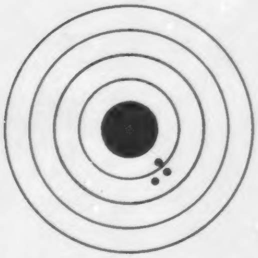
Remember, the rule in sight adjustment is: ***Move the rear sight in the direction you want the bullets to move.*** In other words, the shot group in drawing #3 is low and to the right. So you need to move the rear sight up and to the left. Move the sights only a little each time. If your rear sight moves in, clicks, or is calibrated, read the manufacturer's guide to determine how far each click or line will move the bullet at a predetermined distance. Once you have adjusted your sights, fire another three rounds. If more correction is needed, adjust the sights and proceed until the rifle is sighted in.



#1: Using an open sight, your sight picture should look like one of these.



#2: If your three-shot group looks like this, work on your fundamentals.

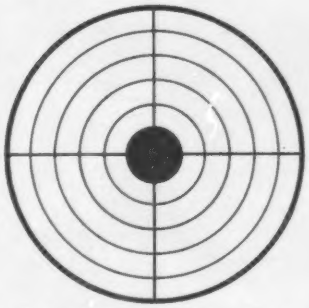


#3: Adjust your sights by moving the rear sight up and to the left.

TELESCOPIC SIGHTS

Sighting in a telescopic sight is similar to sighting in open sights. The scope will have a calibrated elevation adjustment for up and down and a windage adjustment for movement left and right. To save time and ammunition, there are two preferred methods for getting your scope close to being sighted in without firing shots.

The first method is restricted to bolt action firearms and is referred to as "bore sighting." To bore sight, first remove the bolt from the rifle. Next, place the rifle in a firearm vise or on sandbags and look through the bore from the breech end. As you look through the bore, move the rifle until it is in direct line with the bull's-eye on your target. Once lined up, carefully secure your rifle in this position with sandbags or by tightening the vise. Now look through the scope and adjust it until the cross hair indicator lines are on the center of the bull's-eye. Look through the bore again to make sure you didn't move the rifle. Replace the bolt and load one shell into the rifle. In a secure position, fire the rifle at the bull's-eye sighting with the scope. If you have done the process correctly and used good marksmanship fundamentals, the shot should be near or in the bull's-eye. If the shot is off a little, make the adjustments to the scope using the same rule of movement as with open sights. Move the rear sight in the direction you want the bullets to move. Fire another round and continue making adjustments until the rifle is sighted in.

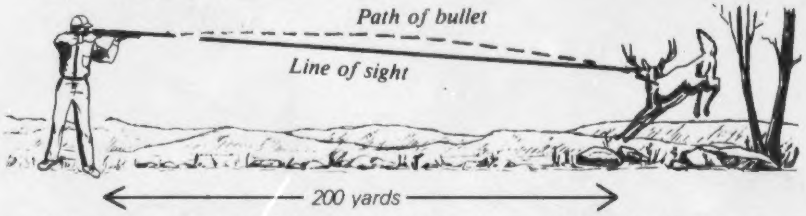


#4: Using a telescopic sight, your sight picture should look like this.

The other method of sighting in a scope without firing can be used with any rifle action. This method is called "bore scoping." To use this method you must purchase or borrow a bore scope. A bore scope is an optical device that fits into the muzzle of the rifle. It is held in place by a metal rod that fits exactly into the bore. It's necessary to choose the rod that is made for the caliber rifle you are using. Some bore scopes come with metal rods that are adjustable to fit several calibers.

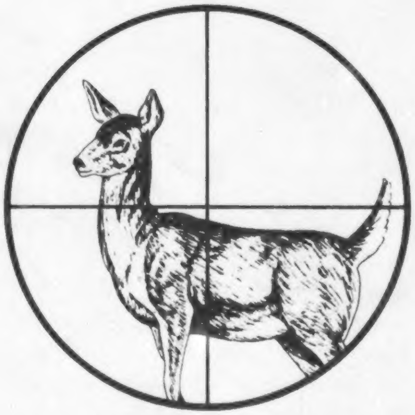
Once the metal rod is fitted securely inside the bore, the optical part of the bore scope should be directly in line with your rifle scope. Secure the rifle with sandbags or in a vise and sight through the rifle scope. Notice that a grid pattern is now visible from the bore scope. Adjust your rifle scope until the cross hairs fall directly in the center of the bore scope grid. Now remove the bore scope and load one round into the rifle. Sight through the rifle scope and place the cross hairs on the center of the bull's-eye and fire the round. The shot should be in or close to the bull's-eye. Make any needed adjustments and fire another round. Repeat this process until the rifle is sighted in.

Once your rifle is sighted in at 100 yards, shooting at targets at greater distances will allow you to learn the trajectory of your rifle and ammunition. Different bullets will have different trajectories. (Trajectory is the path the bullet follows.) See the example below.



Bullets drop as they move forward and it's important to know their trajectory, or path, so you can adjust your sight picture.

Bullets lose velocity and drop as they move forward. Different bullets will drop faster than others. Trajectory charts are available from ammunition manufacturers and will help give you an idea of the trajectory of the ammunition you are using. A rifle sighted in at 100 yards may drop 10 inches at 200 yards. This would be enough to completely miss the animal or miss the vital kill zone and only wound it. By practicing at 200 yards, you will learn how far your bullet will drop and can adjust by holding your sight picture higher as shown at left.



The sight picture is held higher to correct for the distance the bullet will drop.

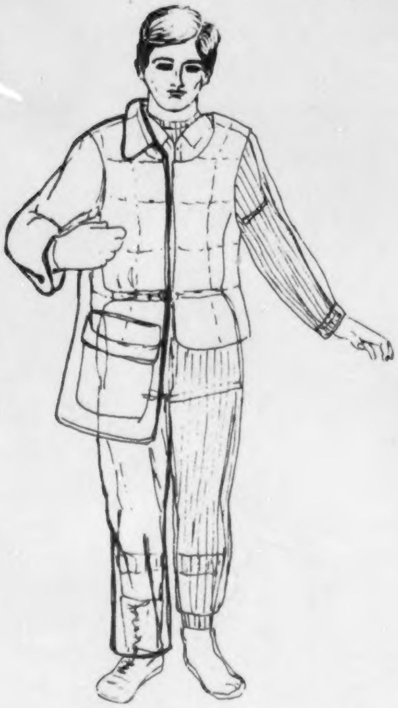
Once again, this is just one more way the responsible hunter learns his limits and the limits of his firearm and ammunition. If you only sight in and practice at 100 yards, you have no business shooting at a deer 200 yards away. Practice your fundamentals and *don't* push your limits!

Another good form of practice for hunters is shooting at life-size animal targets instead of just bull's-eye targets. This allows you to practice picking a spot where the bullet will enter a vital zone of the animal. Since game animals don't have bull's-eyes painted on them, the hunter must know the vital zones.

Animal targets are available with animals in different poses. You can also make low-cost targets of your own. Targets will help you practice picking the right spot. Remember, game animals don't always waltz into view and pose broadside for you. Your shot may come as the animal is quartering toward or away from you.

Clothing

Clothes by themselves are neither "warm" nor "cold." Your body heat and what happens to that heat when wearing clothing is what makes you feel warm or cold. Clothes which make you feel warm keep your body heat inside the clothing. Warm clothes keep out the cold air surrounding your body and trap your body heat in the same way that insulation between the inside and outside walls of your house keeps it warm in winter. Clothes in which you feel cold let your body heat escape. Clothes dampened by sweat or wet weather are "cold" clothes. Wind, though it dries up dampness by evaporating moisture, chills as it dries and makes you cold.



In cold weather, dress in several layers of clothing so you can remove layers if you become warm.

A hunter's clothing must provide a layer of insulation for warmth, be thick enough to absorb perspiration, and be able to shed rain and cut the wind. Clothing which is completely waterproof will shed any wetness, but it does not provide insulation or absorb perspiration. Without insulation to keep you warm and absorbency to help keep you dry, you will feel, depending on the weather, either very cold or extremely hot while wearing totally waterproof garments.

Clothes should be loose enough for comfort and not restrict movement. New clothing, no matter how well it fits, when first worn needs to be "broken in." Plan to buy new hunting clothes well before the hunt so any needed alterations can be made before wearing them afield.

The fall hunter must be especially careful selecting clothes for the hunt. The temperature can rise and fall several degrees in a few minutes. Hunting can be strenuous exercise. You may get hot and perspire while walking, but your body will cool off quickly when you stop to rest. This is why dressing in layers is wise. As you feel your body start to heat up, unzip or remove an outer garment. When you stop for a period of time, put the extra layer back on.

UNDERWEAR

During warm weather, wear regular cotton underwear. For cool fall days and frosty nights, thermal-type knit undergarments are ideal. The quilted knit fabric provides extra insulation and absorbency and is easily laundered and dried in camp.

In cold weather, snow, and freezing conditions, you will need undergarments with another layer of wool for insulation and an inner layer of cotton to prevent itching and absorb moisture. The two-piece style with separate tops and bottoms is most practical, allowing you to wear them separately or together.

Quilted undergarments of down or Dacron will keep you warm in extreme cold. Down-filled garments have excellent insulating qualities with little weight and bulk. The disadvantages of down are that it is harder to launder and it loses almost all of its insulating value when wet.

Dacron, a synthetic fiber, has similar qualities to down but does not provide quite as much insulation or as little bulk as down. Dacron-filled garments, on the other hand, retain most of their insulating ability even when wet.

PANTS AND SHIRTS

Unless you are planning to hunt in sub-zero temperatures, pants of any hardy fabric such as cotton twill, duck, denim, or wool will be suitable for hunting.

Denim jeans are practical for hunting, inexpensive, and tough enough to hold up to briars and thorns. Tight-fitting jeans, however, can restrict movement and are cold in freezing weather. Heavy-weight woolen pants are best for hunting in snow. Even when wet, wool provides some insulation against the cold. Wool is also quieter to walk in than denim. Shirts of heavy cotton are suitable for hunting during mild weather, but in cold weather woolen shirts are much better.

Remember the layer system. Two light, woolen shirts are more versatile than one heavy one. If you increase your activity or the temperature rises, you merely take off one shirt.

BOOTS AND SOCKS

Care and conditioning of the feet, as well as proper fitting boots, are essential to a hunter's well being. Unconditioned feet may swell and bruise. Boots which do not fit can cause painful blisters and a blister can be considered a major injury when walking far from your vehicle or camp.

The most common cause of blisters is chafing from socks and boots. This friction or rubbing occurs if boots are too large or loosely laced and if socks are lumpy or wrinkled.

Do not wear cotton socks when hiking or hunting.

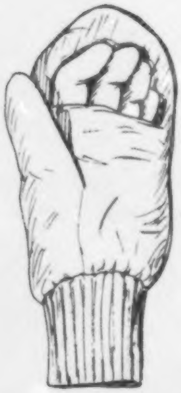
You should not wear everyday socks for hiking or hunting. Most hunters wear two pair of socks—thin, lightweight ones next to the feet and heavier socks over the top. Socks should be wool, orlon, or a wool-orlon blend—*not cotton*. Cotton socks will make your feet wet, clammy, and uncomfortable after walking a long distance. They can even cause blisters. Wool socks are warm and they absorb moisture. The thickness of two pairs will act as a cushion between boot and foot. Orlon is a synthetic fiber. Like wool, it absorbs moisture well and is thick enough to cushion the sole. Orlon and wool-orlon blends wear longer than woolen ones, and they are easier to wash and dry.

When pulling on socks, take your time. Remove all wrinkles or bunching at the toes and heels. When trying on boots, remember to wear your hiking socks. Boots bought for hunting should be a half size larger than your regular shoe size to allow room for thick socks and some swelling that occurs with vigorous walking.

Take your time when lacing boots. Loose boots can cause blisters and laces too tight can cut off needed circulation. Leather boots will soften and mold to your feet. New boots need to be broken in *before* the hunt to prevent blisters.

The weight of boots is important. Don't buy boots heavier than necessary. Even a few ounces of extra weight carried for many miles can be equal to several hundred pounds of physical exertion.

Leather makes a good boot material because it breathes—letting in air and carrying off heat. It is also a good insulation. A cheap waterproofing job can ruin these qualities. Choose a waterproofing agent that will still allow the leather to breathe.



Some mittens are made especially for hunters.

GLOVES AND MITTENS

Gloves are a necessary part of a hunter's gear. They keep the hands warm and protect them. In mild weather, short buckskin gloves are best. Avoid ones with stretchy, elastic wrist wraps as they tend to collect debris.

Less expensive than buckskin, yet durable and practical, are the jersey knit work gloves available in most stores. Besides costing less, these gloves are warmer than buckskin. They are not waterproof, however, and are impractical for wet conditions. In cold weather, jersey knit gloves worn inside leather mitts will keep hands warm and dry.

For extra warmth in very cold weather, many hunters wear knitted wool mitts inside tough leather mitts. This combination is warm, durable, and inexpensive. For winter hunts in sub-zero cold, down-filled mitts provide the most warmth. Some mittens are made especially for hunters and have quick adjustments to allow use of the trigger finger.

HUNTING COATS

In mild weather, a denim jacket is a wise choice. Like denim jeans, a denim jacket is trim, lightweight, and hard-wearing. Denim resists snagging on branches and underbrush better than most materials and is not expensive.

A long-sleeved, heavy wool shirt is suitable for mild-weather hunting. The shirt should have pockets, preferably with button-down flaps. Down or Dacron-filled vests are popular because they retain body heat to keep you warm and at the same time allow freedom of movement. For extremely cold weather, a down or Dacron-filled jacket with hood is the ultimate in warmth and comfort.

In rainy weather a rain jacket and trousers are a must.

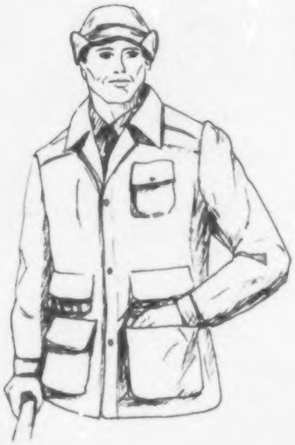
If the raincoat lacks a hood, a rain hat is needed.

There are coats designed especially for upland game and waterfowl hunters. They are usually made of light canvas or khaki. Such coats have many pockets in which to carry shells and accessories and a large waterproof pocket in the back for carrying game. This coat is ideal for spring, summer and fall. When the weather is warm, it can be worn with a light shirt. In cool weather, it is comfortable worn over a woolen shirt or sweater.

HEADGEAR

No matter what the weather, a hat should be included with a hunter's gear. You should have a hat that will not be knocked off easily or nudged over your eyes by tree branches. In bright sunlight, your hat should shade your eyes and protect your neck from sunburn. In cold weather, it should keep your head warm and protect your ears from frostbite.

Body heat is lost rapidly when the head is exposed to cold. Because body heat escapes faster through the head than from anywhere else, it is vital to keep your head covered in cold weather. Your hands and feet will stay warm longer if your head is covered.



Body heat escapes through the head, so wear a hat in cold weather.

HUNTER ORANGE CLOTHING

Deer hunters are required by law in Missouri to wear a cap or hat and a coat or vest that are hunter orange in color. Orange clothing also is advisable for other types of hunting. You will be safer and more responsible by wearing bright clothing. Fluorescent or hunter orange has been found to be the best color.

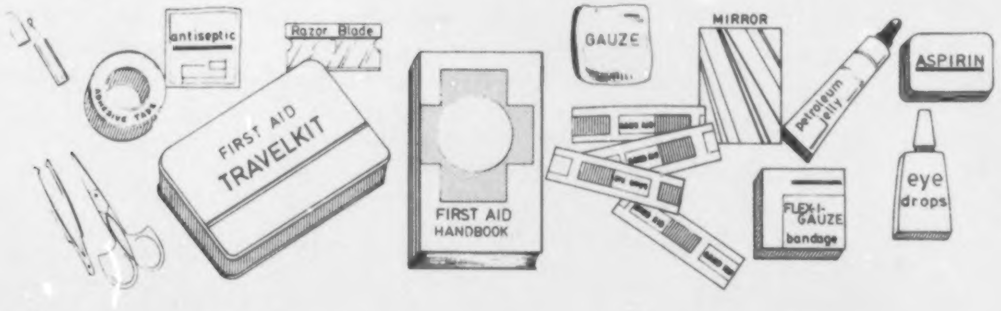
Equipment

For the responsible hunter to be fully prepared, there are many items of equipment he should take on each hunting trip. Some of these will vary depending upon the type of hunting, but some should be a part of every hunt.

FIRST AID KIT

A good first aid kit can more than pay for itself if used only one time. Kits can be purchased commercially as small, self-contained pocket units or you can assemble your own. When assembling or buying one, keep in mind what you may encounter in the field. Everything from headaches, blisters, burns, cuts, and scrapes should be considered.

Sample first aid kit



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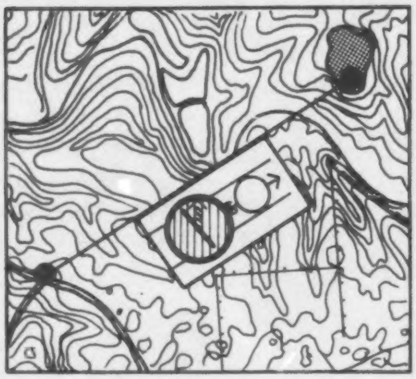
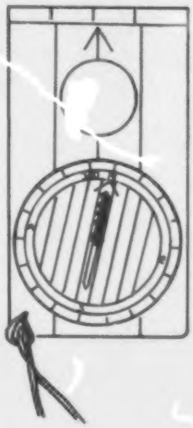


A topographical map.

TOPOGRAPHIC MAPS

A topo map is designed to show the contour of the land. Such maps can be great timesavers in helping you find game and avoid getting lost. They show hills, valleys, fields, water, forests, and man-made features. You can purchase topographic maps from most stores that cater to hikers and backpackers or you can order them from the U.S. Geological Survey Office in Rolla, Missouri. Each map covers a 49-square-mile area. Before purchasing a map, you must determine the name of the map for the area you are interested in. Index maps in the stores that sell them will give you this information or you can order an index map from the U.S. Geological Survey Office.

Learn how to use a compass.



COMPASSES

A compass and the knowledge of how to use it in combination with a map, again, can be a big timesaver and help lessen your chances of getting lost. A compass is not hard to learn to use and will pay for itself many times over. Some deer hunters find that a deer stand they've built is hard to find in the pre-dawn darkness. Using a compass, they can take a reading from their parking place to the tree stand and simply follow the compass needle to the stand. Simply carrying a compass in the field, however, will not insure that you will not get lost.

Permits

A responsible hunter, by being familiar with game laws, will know what permits he needs to hunt specific types of game. In Missouri you need a small game hunting permit to hunt all upland game animals and furbearers if you are 16 to 65 years of age. Those 15 and younger don't need a small game permit if they are hunting in the presence of a licensed adult or if they have a valid hunter education card.

Deer and turkey hunters need a special permit for each species. There is no age limit on these permits. Waterfowl hunters 16 or over need a small game hunting permit, a signed federal duck stamp, and a signed state duck stamp.

You should have the necessary permits with you at all times while hunting.

Checklists

Hunters soon learn what specialized equipment items they prefer to carry for specific types of game. The problem is, however, that they often don't remember an item until they need it in the field. A good way to prevent this is to develop an equipment checklist as part of your pre-hunt planning. A sample checklist is on page 87.

Field care of game equipment

Some important pieces of equipment are those items used in field dressing and transporting game. These items will vary with personal preference and type of game you are hunting. The key is to be prepared. Think ahead and take what you'll need to properly care for the meat.

A sharp knife and a stone to keep it sharp should be a part of every hunter's equipment. A piece of rope can assist a deer hunter in dragging out a deer. Plastic bags are good for saving the hearts and livers of game animals, but keep meat cool so it doesn't spoil.

Here again, by thinking ahead, the responsible hunter will never have to say "I wish I had brought that," because he'll always have what he needs. That's what being *prepared* is all about.

Glossary

COMPASS	An instrument for determining direction by means of a magnetic needle turning freely on a pivot and pointing to magnetic north.
HUNTER ORANGE	Bright, fluorescent orange color required by law in Missouri to be worn by firearm deer hunters.
PATTERN	The way a shotgun and shotshell distribute shot at a given distance.
SIGHT-IN	Adjusting the sights on a firearm so you will hit your target accurately.
TOPOGRAPHIC MAP	A precise map that shows the natural and man-made features of a place or region including their relative position and elevation.
TRAJECTORY	The path a bullet follows.

Sportsman's Checklist

An extensive list is given for long trips. You may need additional special equipment if you are going into remote country.

Big Game Hunt

FIREARM SEASON

☐ Firearm
☐ Spare Firearm
☐ Rifle Cases
☐ Ammunition
☐ Rifle Cleaning Kit
☐ Hunting Regulations
☐ Hunting License
☐ Game Tags

ARCHERY SEASON

☐ Bow
☐ Extra Bow String
☐ Hunting Arrows
☐ Spare Broadheads
☐ Broadhead Cement
☐ Broadhead Sharpening File
☐ Field Arrows
☐ Bow Quiver
☐ Bow String Silencers
☐ Brush Deflectors
☐ Bow String Wax
☐ Bow Tip Protector
☐ Armguard
☐ Shooting Glove or Tab
☐ Camouflage Bow Cover
☐ Camouflage Outfit
☐ Archery Regulations
☐ Archery License

INCLUDE ON ABOVE HUNTS

☐ Binoculars
☐ Compass
☐ Sheath Knife and Belt
☐ Pocket Knife
☐ Whetstone
☐ Map of Hunt Area
☐ Bone saw
☐ Meat Sacks
☐ Bulk Salt
☐ Plastic Bags
☐ Rope and Wire

Upland Game and Waterfowl Hunt

☐ Shotgun
☐ Shotgun Case
☐ Shotshells
☐ Cleaning Kit
☐ Pocket Knife
☐ Hunting Regulations
☐ Hunting License
☐ Decoys
☐ Calls
☐ Waders or Hip Boots
☐ Flotation Device

Camping Gear

SHELTER

☐ Tent
☐ Tarp
☐ Sleeping Bag
☐ Foam Pad or Air Mattress

COOKING

☐ Camp Stove and Fuel
☐ Cooking Utensils
☐ Matches
☐ Cooler
☐ Water Cans
☐ Food

LIGHTING

☐ Lantern and Fuel
☐ Extra Mantles
☐ Flashlight

TOOLS

☐ Axe
☐ Shovel
☐ Tool Kit

Personal Gear

CLOTHING

☐ Duffle Bag
☐ Inner Socks
☐ Wool Socks
☐ Boots
☐ Camp Shoes
☐ Long Underwear
☐ Wool Shirt
☐ Sweater
☐ Trousers
☐ Hunting Jacket
☐ Vest
☐ Cap
☐ Gloves or Mitts
☐ Rain Gear
☐ Boot Waterproofing
☐ Spare Boot Laces

TOILET ARTICLES

☐ Comb
☐ Hand Soap
☐ Razor
☐ Shaving Cream
☐ Toothbrush and Toothpaste
☐ Towel and Washcloth
☐ Toilet Paper

OTHER

☐ Camera and Film
☐ Sunglasses
☐ Pencil and Notebook
☐ First Aid Kit
☐ Survival Kit

Review of Chapter 7

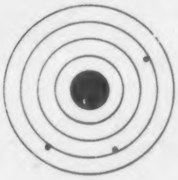
1. Why should you pattern a shotgun?

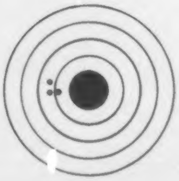
2. Using the chart in Chapter 7, list the choke pattern and shot size you would use to hunt the following wildlife.

	Choke Pattern	Shot Size
Turkey under normal conditions		
Pheasant in close cover		
Cottontail rabbits in an open field		
Squirrel		

3. Why is it important to sight-in a rifle or handgun?

4. If you are sighting in your rifle and your targets look like these, what should you do?





5. To adjust your sights when sighting in a firearm, move the ____________ sight in the direction you want the ____________ to move.

6. What is trajectory?

____

____

Why is it important for a hunter to know the trajectory of his ammunition? __________

____

7. Why is wool good to wear if you are hunting in snow?

____

____

8. Which of the following are *not* good socks for hunters?
   a. wool
   b. orlon
   c. cotton
   d. wool-orlon blend

9. Why should a hunter wear *layers* of clothing? ____________________________

____

10. Clothing made with down will keep you warm if it is very cold, but you should not let down get __________ for it loses almost all of its insulating value.

11. Clothing that is completely waterproof will shed wetness, but you still may be uncomfortable. Why?

____

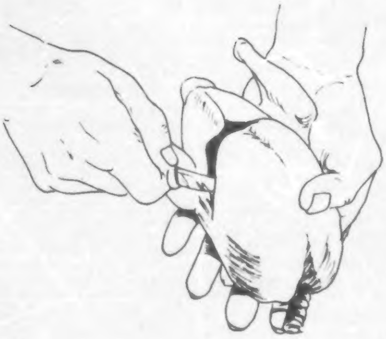
____

12. What color is most visible and the safest to wear when hunting?

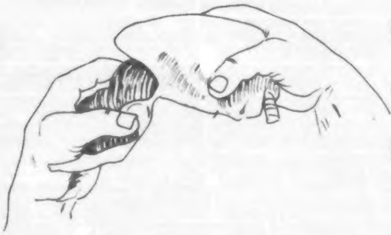
____

Care of Game—Quail, Dove, Woodcock

Editor's Note: Most game, except deer, can be carried home to be dressed if the temperature is cool. How game is cleaned is often a matter of personal choice since there are usually several methods. Here is one recommended way.

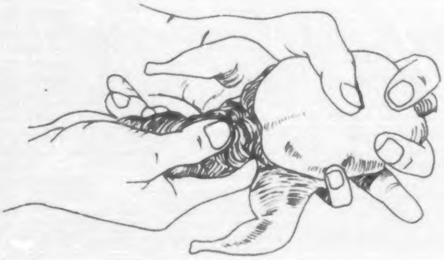


1. Grasp bird by legs in one hand.
2. Grasp feathers and skin on breast and pull downward away from the bird's body. Continue pulling skin and feathers until they are completely removed.

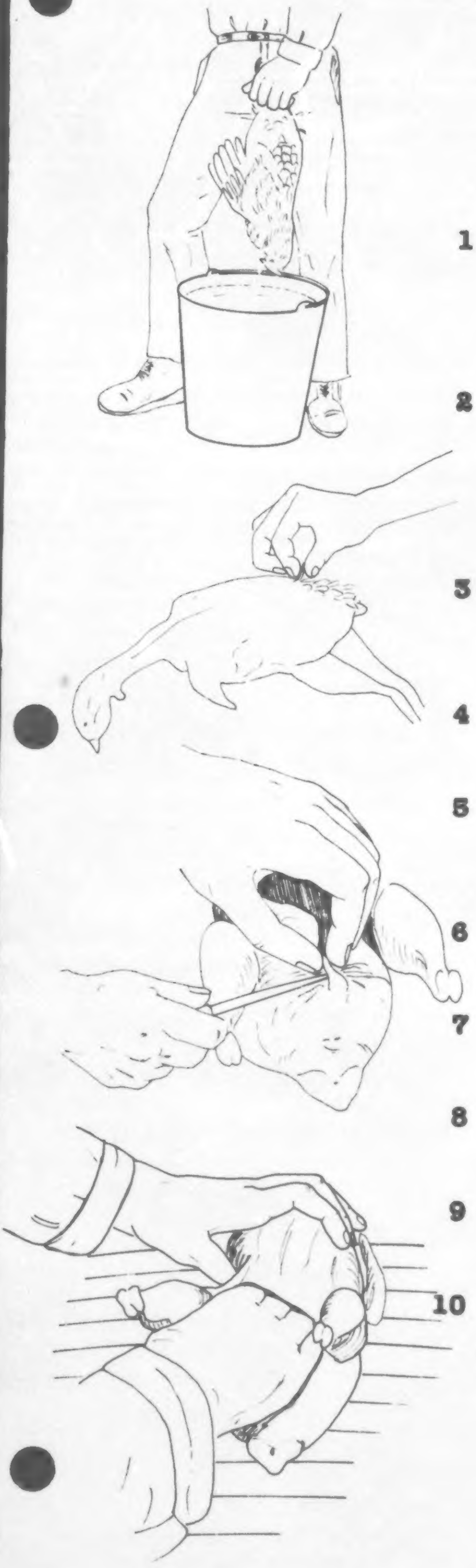


3. Cut off wings at first joint.
4. Cut or pull head off.
5. Cut or tear breast partially free from the rest of the bird. This exposes the entrails so they can be removed.
6. Cut off the feet and legs at the knee joint.

Note: Some hunters prefer to save only the breast of doves and woodcocks. Some hunters prefer to pluck quail (see instructions for turkey).



Care of Game—Turkey, Pheasant, Grouse, Ducks, and Geese



Editor's Note: Most game, except deer, can be carried home to be dressed if the temperature is cool. How game is cleaned is often a matter of personal choice since there are usually several methods. Here is one recommended way.

1 Dry pluck or scald the carcass to aid in removing feathers. To scald the bird, dip it in 180-degree water. Hold the bird by the feet and dip it up and down in the water several times.

2 Pluck the feathers from the bird, being careful the skin remains intact. Singe any remaining hair-like feathers to remove them. A small gas torch works well for this. Lightly pass the flame over the bird's body until the feathers are singed.

3 Cut off the feet and head. Bend the legs at the joint and cut around the joint with a sharp knife, finally cutting through the skin, but never cutting bone.

4 Carefully cut off the preen gland, which looks like a small button at the base of the tail, so oil doesn't escape.

5 Cut around the anus of the bird being careful not to puncture the intestines. Reach in and pull everything out through the circular hole.

6 Remove the gizzard, liver, and heart from the entrails if you wish to keep them.

7 Remove the crop and any fatty tissue. The crop is located where the neck meets the breast and is used for storing food.

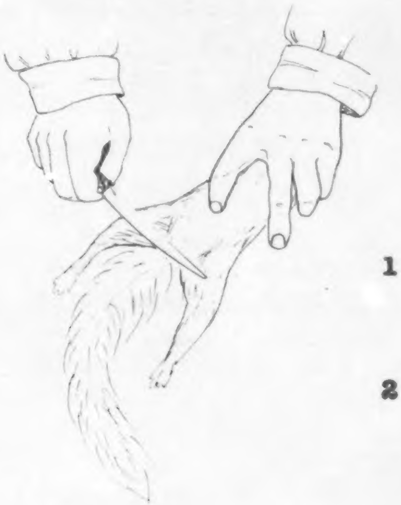
8 Let the bird soak in cold water in the refrigerator for 2 or 3 hours. Bird is now ready to cook or freeze.

9 Before cooking, soak overnight in salt water. Do this before *cooking*, not before freezing.

10 Carefully check the bird for bird shot before you cook and serve.

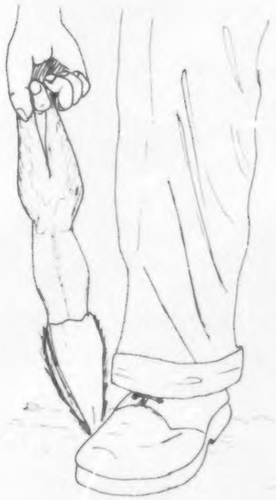
Care of Game—Squirrel

Editor's Note: Most game, except deer, can be carried home to be dressed if the temperature is cool. How game is cleaned is often a matter of personal choice since there are usually several methods. Here is one recommended way.



1 A popular way of cleaning squirrel is to make a cut across the underside of the tail at its base, through the tail bone, leaving only the back skin attached.

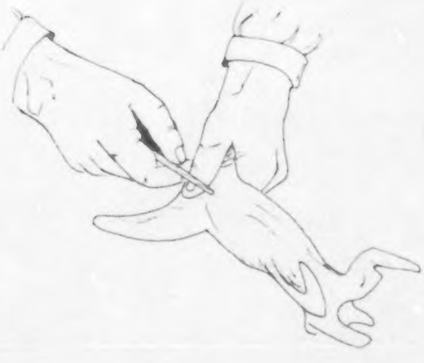
2 By placing your foot on the underside of the tail and giving a firm tug upward on the hind legs, the skin forward of the hind legs peels off like a shirt. Be careful not to get hair on the meat.

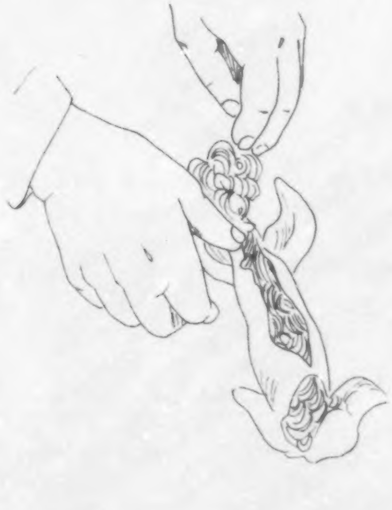


3 Before cutting the skin off, transfer your foot to hold down the peeled-off hide. Work loose the skin left on the belly, pull back on it, and peel the skin off the hind legs.

4 If the head is not wanted, it can be cut off when the hide has been peeled over the neck. Otherwise, the skin is removed from the head with light cutting strokes to detach ears and eyelids. Work the skin back over the legs to the "ankles" and cut them off there.

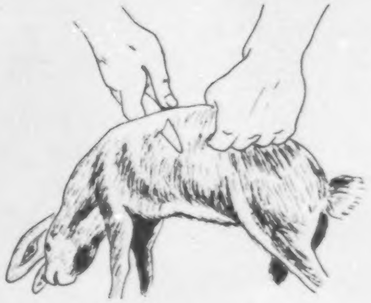
5 After skinning, the tip of a sharp knife can then be used to open the stomach. Cut down the center from the chest wall through the ribs and finally through the pelvic area. The insides can easily be pulled out of the body cavity, although you should be careful not to puncture them. The animal is now ready to be cooked.





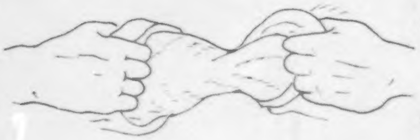
Care of Game—Rabbit

Editor's Note: Most game, except deer, can be carried home to be dressed if the temperature is cool. How game is cleaned is often a matter of personal choice since there are usually several methods. Here is one recommended way.



1 To dress a rabbit, pinch the loose skin on its back between your fingers and insert your knife through the skin, cutting across the back.

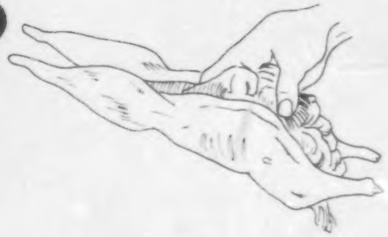
2 Now grasp the hide on both sides of the cut and pull it away in opposite directions over the head and feet. Be careful not to get hair on the meat.



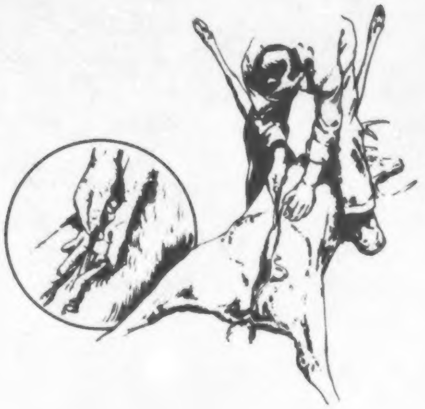
3 Cut off its head and feet and discard with the hide. Remove the tail.

4 Cut the stomach open and remove the insides. Be careful not to puncture anything.

5 Trim away any shot-damaged meat, wash the carcass, and wipe it dry to prevent spoilage. The animal is now ready to be cooked.



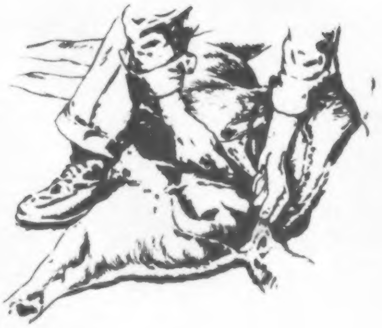
Care of Game—Deer



A deer down is not necessarily a deer dead, so reload your rifle, wait at a short distance for a few minutes, and approach cautiously from behind his head. Set your rifle aside only after you are certain the deer is dead. If the eye does not blink when touched with a stick, he's yours. Now is the time to fix your deer tag securely around the front leg.

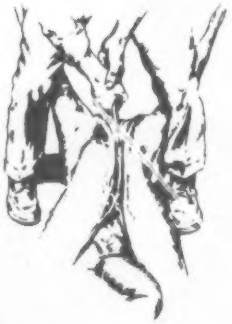
Strong juices from the paunch will taint the meat and should be removed if the animal was gut shot or if you accidentally cut the paunch while field dressing the deer. A rag or bunches of leaves may be used to wipe out the juices or they may be washed out with water. Some articles state the carcass should not be washed with water, but high-pressure hoses are used as standard procedure in slaughter houses.

A piece of cloth wrapped around the carcass will keep out flies and dirt as you drag it out of the woods or transport it.



The carcass should be dragged out of the woods and not carried on your shoulders. A deer on the shoulders could invite a shot by another hunter. The antlers of a buck make a good handle for dragging. Some hunters tie the front feet behind the head of the carcass to keep them from catching on brush. A strong stick between the hind hocks will provide a good handle for dragging does or fawns.

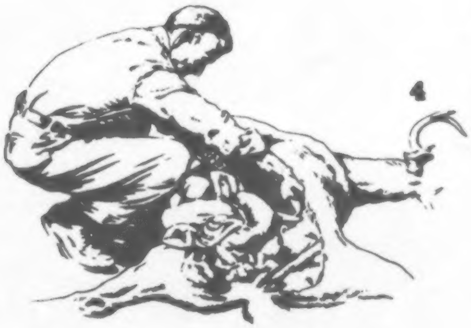
The deer should be kept as clean and as cool as possible during transport. Do not put the deer on the hood or front fender where it will be subjected to heat from the motor. A plastic bag full of ice placed inside the carcass will keep it cool if you have a long trip home.



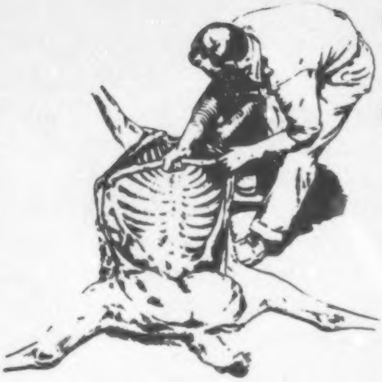
1 Dress deer immediately to insure rapid loss of body heat. Hang animal head up or lay it on a slope with rump lower than shoulders.

2 Cut through hide along center line of belly from brisket to vent. Deepen cut through belly muscles using fingers to guide knife and avoid cutting intestines or paunch. (see sketch in circle.)

3 Cut deeply around anus. Remove it with intestines. Separate hind quarters by splitting pelvic bone with sharp, heavy knife or hand-axe.



4 Open chest cavity, if desired, by splitting the cartridge that joins the ribs to the breast bone. Split muscle (diaphragm) separating chest from stomach cavity.



5 Sever gullet and windpipe as far forward as possible. Pull heart, liver, lungs, paunch and intestines out on the ground.

6 Prop body cavity open with sticks and cool quickly by hanging, head up in a shady, airy place. Let it hang this way for about an hour before moving it to camp or car.

Know Your Conservation Agent

Conservation agents are assigned to counties and regions throughout the state. They enforce our game laws, teach hunter education classes, advise landowners on how to manage their land for wildlife, and perform numerous other public services.

You should know your local conservation agent. If you encounter a problem in the field, have a question about the wildlife code, or need to report a possible violation, contact your agent.

PRIVATE LAND
IN PARTNERSHIP

Your Conservation Agent: ____________________

Address: ____________________

____

Phone: ____________________

Final Evaluation of Course Objectives

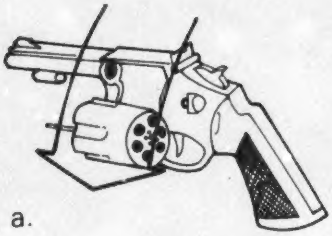
Read each question carefully before answering. There is only ONE correct answer for each question. Choose the BEST answer.

1. Which of the following would improve hunter/landowner relations?
    a. Asking permission before hunting
    b. Putting your trash out of sight in a ditch
    c. Offering to share part of your game
    d. a and c

2. Which color of clothing is required by law for Missouri firearm deer hunters?
    a. Bright yellow
    b. Fluorescent orange
    c. Red
    d. Camouflage

3. Why is it important to pattern a shotgun?
    a. To make sure the shotgun is not too heavy
    b. To make sure there are no obstructions in the barrel
    c. To be certain the pattern is even to insure clean, quick kills
    d. All of the above

4. What can hunters do to protect the environment?
    a. Obey laws
    b. Support good conservation policies
    c. Never litter
    d. All of the above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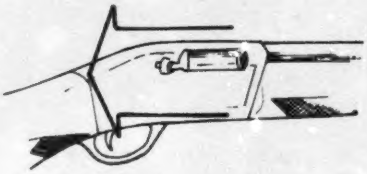
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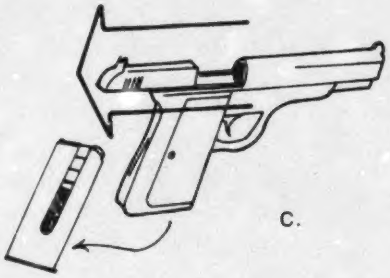

c.

5. Which of the above are semi-automatic actions?

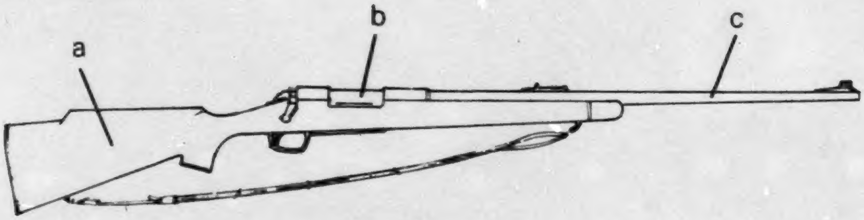
    a. a and b
    b. b and c
    c. a and c
    d. a, b, and c

6. Which of the following is unacceptable outdoor behavior?
   a. Trespassing
   b. Littering
   c. Taking more than the limit
   d. All of the above

7. On a shotgun, what controls the pattern of the shot?
   a. Action
   b. Stock
   c. Choke
   d. Gauge

8. Which of these shot sizes would be BEST for turkey or goose hunting?
   a. 9
   b. 00 buck
   c. 4
   d. 8

9. When should the "safety" on a firearm be released?
   a. When you pick up a firearm
   b. When you hear movement
   c. Just before you shoot
   d. None of the above



10. Which of the above is the action of the firearm?
   a. a
   b. b
   c. c
   d. none of the above

11. What is the BEST way to store firearms and ammunition?
   a. Locked together in a cabinet
   b. Locked separately
   c. Hidden in a closet
   d. Locked in the trunk of a car

12. What is the first thing a hunter should do when he thinks he sees the game animal he is hunting?
   a. Check his gun to make sure it is loaded
   b. Make sure he has a good sight picture
   c. Make sure the "safety" is off
   d. Positively identify the animal

13. Where do most firearms accidents in the United States occur?
    a. In the home
    b. In the field
    c. In vehicles
    d. On firearm ranges

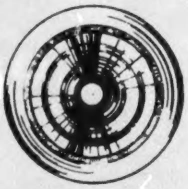
14. Which of the following BEST defines "rifling"?
    a. Spiral grooves cut in a barrel which cause the bullet to spin
    b. Spiral grooves cut in a barrel which cause the bullet to tumble
    c. Spiral grooves cut in a barrel to prevent the firearm from misfiring
    d. Spiral grooves cut in a barrel to make the firearm more attractive

15. Which of the following are causes of firearms accidents?
    a. Ignorance
    b. Carelessness
    c. Both a and b
    d. Neither a nor b

16. What determines how you carry a gun when hunting?
    a. Which direction you want to point the muzzle
    b. Location of your partners
    c. Type of terrain you are walking in
    d. All of the above

17. Which of the following is not required for wildlife to survive?
    a. Water
    b. Food
    c. Space
    d. Fences

18. Which drawing is an example of the inside of a shotgun barrel?
    a. a
    b. b
    c. Neither
    d. Both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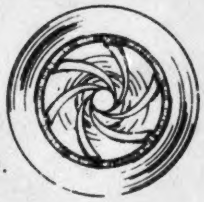

b.

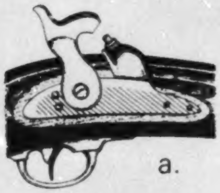
19. Which BEST defines the "action" of a firearm?
    a. The "handle" of a firearm
    b. The metal tube through which the projectile passes
    c. The part that is moved by the finger to fire the firearm
    d. The moving parts that load, fire, and eject the spent cartridge case

20. In which of the following situations should a hunter unload his firearm?
    a. When crossing a fence
    b. Climbing or descending a steep hill
    c. Neither a nor b
    d. Both a and b

21. Why do Americans hunt today?
    a. They enjoy the sport
    b. They feel a link to the past
    c. They like to eat game
    d. All of the above

22. In Europe, wildlife belongs to the landowner. Who does wildlife belong to in Missouri?
    a. The governor
    b. The landowner
    c. The people of the state
    d. The Department of Conservation

23. Which of the following is a flintlock ignition system?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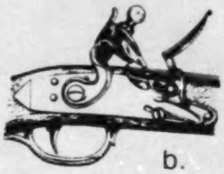
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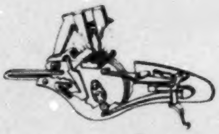
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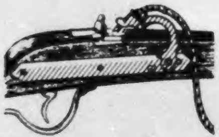
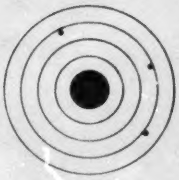

d.

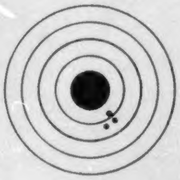
24. Which of the following BEST describes trajectory?
    a. Shooter's line of sight
    b. Maximum range of ammunition
    c. Path the bullet follows
    d. Telescopic sight picture

25. When sighting in your gun, if your target looks like this, what should you do?



    a. Move your rear sight up and to the left
    b. Move your rear sight down and to the right
    c. Don't move the sight, but shoot three more shots and try for a better shot group
    d. Move your rear sight up and to the right

26. When sighting in your gun, if your target looks like this, what should you do?

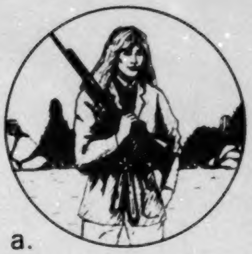


    a. Move your rear sight up and to the left
    b. Move your rear sight up and to the right
    c. Move your front sight down and to the left
    d. Shoot again

27. Which of the following BEST defines carrying capacity?
    a. Food, water, space, and cover
    b. Habitat
    c. The number of a specific wildlife species that a given habitat can support
    d. None of the above

28. Which ignition system made repeating firearms practical?
    a. Matchlock
    b. Wheellock
    c. Flintlock
    d. Caplock

29. Which of the drawings below represents a two-handed ready gun carry?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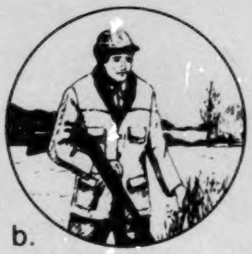
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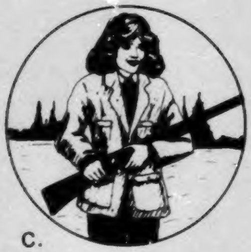
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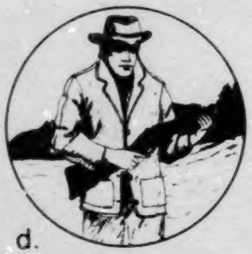

d.

30. What is the most important thing we must do to insure a continuing supply of wildlife?
    a. Don't do anything—just leave wildlife alone
    b. Feed the animals
    c. Increase wildlife habitat
    d. Build more zoos

31. Where is the "brain" of the firearm?
    a. The trigger
    b. The muzzle
    c. The person holding it
    d. The action

32. Which material is the BEST to wear when hunting in cold weather?
    a. Polyester
    b. Wool
    c. Denim
    d. Cotton

33. Why do most quail hunters prefer modified or improved cylinder chokes?
    a. The shot pattern opens up quicker to help hit short range, fast targets
    b. The shot flies with more speed
    c. The shot pattern stays together longer to help hit short range, fast targets
    d. The shot flies slower to help hit the moving target

34. Which of the following BEST defines ethics?
    a. A set of written laws
    b. How you behave based on your personal values
    c. Survival of the fittest
    d. Your right to hunt

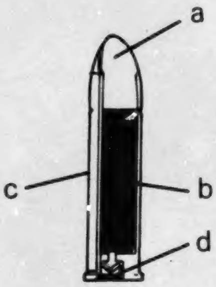
35. Of the following, which is NOT a way Missouri hunters contribute money to wildlife conservation?
    - a. Pittman-Robertson Tax
    - b. 1/8 of 1% sales tax
    - c. Hunting permits
    - d. Income tax

36. Which of these is the largest shot size?
    - a. 4
    - b. 2
    - c. 7½
    - d. 9

37. What's the first thing you should do when cleaning a firearm?
    - a. Clean the barrel with powder solvent
    - b. Wipe off the outside of the gun
    - c. Put light oil on all metal parts
    - d. Point the muzzle in a safe direction and make sure the gun is unloaded

38. Which of the following reasons for learning basic firearms safety is the MOST important?
    - a. To prevent damage to your firearm
    - b. To become a better shot
    - c. To prevent accidents
    - d. To learn how to transport firearms

39. Which of the rifle cartridge components is known as the "primer"?



40. Which of the following are ways firearms are used for recreation or as a hobby?
    - a. Collecting
    - b. Hunting
    - c. Target shooting
    - d. All of the above

41. When handed a firearm, what is the first thing you should do?
    - a. Check to see if it is loaded
    - b. Point the muzzle in a safe direction
    - c. Make sure the safety is on
    - d. Open the action

42. Which of the following is the BEST way to transport a firearm?
    - a. Loaded and in easy reach in case game is spotted
    - b. Unloaded and in a case
    - c. Hidden under the seat
    - d. Action open and on a gun rack

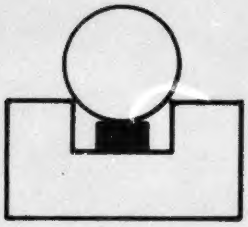
43. Which of the following BEST defines conservation?
   a. Wise use
   b. No use
   c. Keep safe
   d. All of the above

44. Which of the following BEST defines a zone of fire?
   a. Area in which a hunter may safely shoot
   b. Area where a bullet will land
   c. Path the bullet will follow
   d. Place where animal usually hides

45. Who gets the fine money collected for game law violations?
   a. The Department of Conservation
   b. Schools in the county where violation occurred
   c. The Conservation Agent
   d. None of the above

46. Which of the following are ways of harvesting surplus wildlife populations?
   a. Hunting
   b. Trapping
   c. Both a and b
   d. None of the above

47. Which of these is a correct sight picture?



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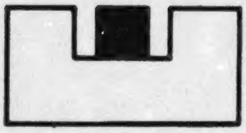

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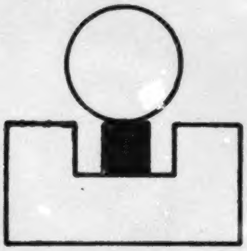

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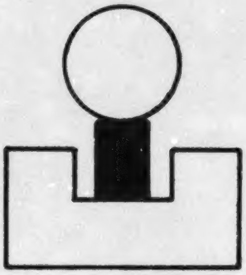
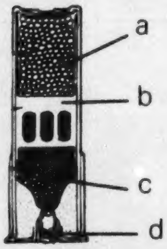
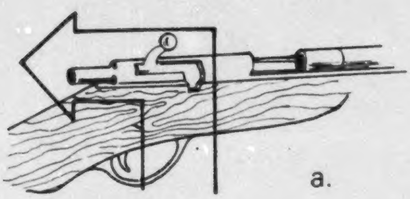


d.

48. Which of the shotgun shell components is known as the "wad?"



49. Which one of these drawings represents a "hinge" action firearm?



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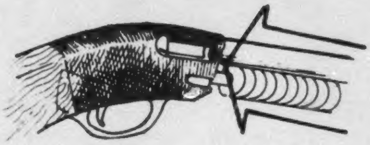

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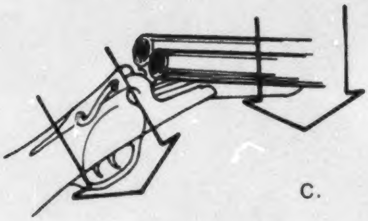

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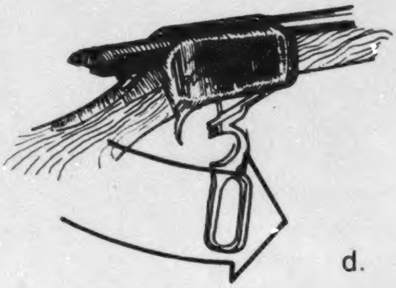

d.

50. Which one of the drawings represents a "bolt" action firearm?

Answer Sheet

Mark your answer by filling in the () after the letter that is the correct answer.

1. a () b () c () d ()
2. a () b () c () d ()
3. a () b () c () d ()
4. a () b () c () d ()
5. a () b () c () d ()
6. a () b () c () d ()
7. a () b () c () d ()
8. a () b () c () d ()
9. a () b () c () d ()
10. a () b () c () d ()
11. a () b () c () d ()
12. a () b () c () d ()
13. a () b () c () d ()
14. a () b () c () d ()
15. a () b () c () d ()
16. a () b () c () d ()
17. a () b () c () d ()
18. a () b () c () d ()
19. a () b () c () d ()
20. a () b () c () d ()
21. a () b () c () d ()
22. a () b () c () d ()
23. a () b () c () d ()
24. a () b () c () d ()
25. a () b () c () d ()
26. a () b () c () d ()
27. a () b () c () d ()
28. a () b () c () d ()
29. a () b () c () d ()
30. a () b () c () d ()
31. a () b () c () d ()
32. a () b () c () d ()
33. a () b () c () d ()
34. a () b () c () d ()
35. a () b () c () d ()
36. a () b () c () d ()
37. a () b () c () d ()
38. a () b () c () d ()
39. a () b () c () d ()
40. a () b () c () d ()
41. a () b () c () d ()
42. a () b () c () d ()
43. a () b () c () d ()
44. a () b () c () d ()
45. a () b () c () d ()
46. a () b () c () d ()
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48. a () b () c () d ()
49. a () b () c () d ()
50. a () b () c () d ()

Please type or print plainly.

Hunter Education Registration Card
Missouri Department of Conservation

Initials		Birth Date					
First	Last	Month		Day		Year	

Telephone Number

Area Code Number

Name—Last name (leave one space) First name (leave one space) Middle name

Street Address

City

State

Zip Code

County of Residence

County Code (leave blank)

Age

Male 1 Female 2

Date ______________ 19___

student signature

instructor name (please print)

telephone number

Missouri Department of Conservation
Hunter Education Certificate

has successfully completed
requirements for certification
in the Missouri Hunter Education Program

TEMPORARY

Date of issue ______ (EXPIRES 60 DAYS FROM DATE)

Student Number

Instructor Signature

10 Commandments of Firearms Safety

1 Always point the muzzle in a safe direction. Be able to control the direction of the muzzle even if you should stumble.

2 Treat every firearm as though it were loaded.

3 Unload firearms when they are not in use. Keep the action open when the firearm is stored and carry it in a case to the shooting area.

4 Be sure the barrel and action are clear of obstruction and that you have the proper ammunition for the firearms you are carrying.

5 Be sure of your target before you pull the trigger.

6 Never point a firearm at anything you do not want to shoot. Avoid all horseplay with a firearm.

7 Never climb a fence, tree, or jump a ditch with a loaded firearm. Never pull a firearm toward you by the muzzle.

8 Never shoot a bullet at a flat, hard surface or water.

9 Store firearms and ammunition separately.

10 Avoid alcohol and other drugs before or during shooting.

The Missouri Department of Conservation
Outdoor Skills Education
P.O. Box 180
Jefferson City, Mo. 65102